CURRENT NOTES

Vol. 11, No. 3 April 1991

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68030 SST: Design and Philosophy

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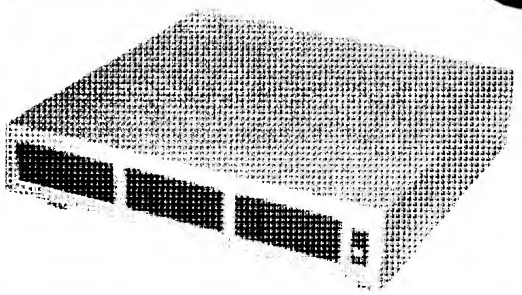
D & P HARD DRIVES



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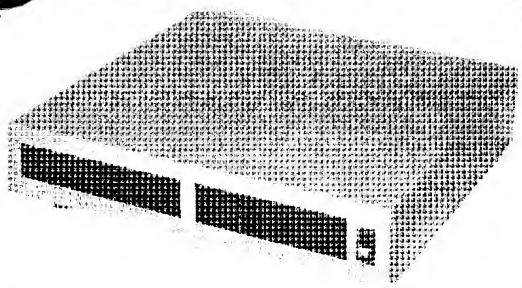

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ST157N-0 3.5" 50MEGS 40MS- $319
ST157N-1 3.5" 50MEGS 28MS- $345
ST277N-1 5.25" 65MEGS 28MS- $349
ST296N-1 5.25" 85MEGS 28MS-$369
ST1096N 3.5" 85MEGS 24MS-$409
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QUANTUM PRO3.5" 210MEG 15MS - $872
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* 65 MEG 28MS- $564
* 85 MEG 28MS- $584
* 85 MEG 24 MS- $624
* 105 MEG 19MS - $782
* 168MEG 15MS - $1015
* 210MEG 15MS - $1087
SYQUEST 44MEG REMOVABLE- $779
* Current Notes PD on HD- $40 (about 40megs)*

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50 MEG 40MSEC & 44 - $1088
50 MEG 28MSEC & 44 - $1104
65MEG 28MSEC & 44 - $1118
85MEG 28MSEC & 44 - $1138
85MEG 24MSEC & 44 - $1178
105MEG 19MSEC & 44 - $1366
168MEG 15MSEC & 44 - $1600
210MEG 15MSEC &44 - $1672
DUAL 44MEG SYQUEST - $1375
Larger drives and other combinations available!

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520FM - call
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SC1435 14" color monitor - $349
PORTFOLIO - call

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Zoom 2400 baud modem - **$95**
US Robotics Courier 2400 - **$299**
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Atari SF314 - $165
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(Ideal for home brew Blitz cables)

Teakwood Disk Cases

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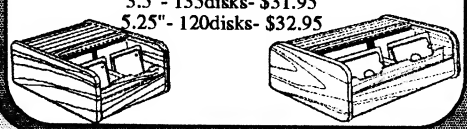
3.5"- 135disks- $31.95
5.25"- 120disks- $32.95



MEMORY UPGRADES

Z-Ram - 2.5 or 4 megs - **$105**
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Z-Ram/2.5- 520 ST-2.5Meg - **$100**
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Z-Ram/Mega II- 4Megs - **$100**
(Board w/chips- $196)
1 Meg 80ns Chips **$6.ea**
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MISC. ITEMS

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ICD Advantage (no clock) - **$83.77**
ICD Advantage Micro - $77
(for use in Mega computers)
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Mega Keyboard Extension 8ft - $12
Mega Keyboard Extension 12ft - $13
Mega Keyboard Extension 25ft -$14

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Monitor Master - $32
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Atari mouse - $48 Golden Image mouse- $37
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Multisynch Monitor (Acer) - **$439**
Omniswitch - $79 Switch Res Soft.- $14.95
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PC Speed- $199 AT Speed- $359
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Star NX1001 9pin - **$160**
Star NX-2420 24pin printer - **$279**
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Supercharger W/1Meg - **$429**
Supercharger Power Supply - $26.95
Supercharger Math coprocessor- **$135**
Synchro Express - $79
TC Power(EMS software for IBMemulators)-$39.95
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Tweety Board - $27
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Timeworks DTP Software
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520 ST	**$ 319.95**
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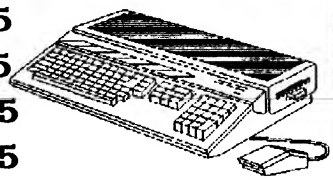
MEGA ST^e 2	**$1599.95**
MEGA ST^e 4	**$1749.95**



WOW!

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TT030/2-50Meg HD	**$2199.95**
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SPECIAL REPORTS

This publication is produced using an Atari Mega ST4, an Atari SM124 monochrome monitor and a Moniterm Viking monitor, a Navarone scanner, and the Atar SLM804 laser printer. Most of the output is generated with *Calamus.* Some pages, including advertisements, are produced with *PageStream* and others with *Publisher ST.*

ATARI NEWS/COMMENTARY

DEPARTMENTS

PRODUCT REVIEWS

MOVING?

Don't forget to send in a change of address notice if you are moving. Current Notes is distributed via second class US mail. The post office does not forward second class publications; they throw them away.

From the Editor's Desk

by Joe Waters

Those readers with a keen eye for typography will notice a different look to quite a few of the pages in *Current Notes* this month. This issue was produced using both *Calamus* as well as the old standby, *Publisher ST.* We have used *Publisher ST* to produce *Current Notes* for the past several years. It is a true work horse that, combined with the Atari Laser printer, produced respectable looking pages quickly and efficiently. When we started with *Publisher ST,* the only competition was *Publishing Partner,* later upgraded to *Pagestream.* However, besides having a tendency to crash, *Publishing Partner* was designed to take advantage of Postscript printers, not the Atari laser. It could produce a very good looking page on an Atari laser, but only at the expense of speed. Where *Publisher ST* could roll out a page in a minute, *Publishing Partner* took 10 minutes or more. When you are producing a lot of pages, that is a significant drawback.

In time, *Calamus* was introduced. This was a powerful desktop publishing package that also took advantage of printing directly to the Atari laser. Although it was fast, the user interface was unfamiliar, the plethora of options confusing, and the manual less than helpful. So, mastering *Calamus* would take some time.

Now time is an element that many Americans find in short supply. As some of you know, I am fully employed by the U.S. Government. I work on *Current Notes* in the evenings and on weekends. With all the things normally involved in producing a publication like this, including handling subscriber and store distribution, advertisers, printers, the post office, and the public domain library to say nothing of preparing each issue, I seldom have any extra time. As a result, *Calamus* sat on my shelf and I stuck with the product that I had already mastered. After all, it was getting the job done.

But, time moves on. *Calamus* improved and newer versions were released. A book was published, The Guide to Calamus Desktop Publishing, that helped novice users get started. More and more high quality fonts, were becoming available for *Calamus.* Timeworks, on the other hand, abandoned the Atari market. There were no new versions of *Publisher ST* planned and no new fonts to use. The competition, both *Calamus* and *Pagestream,* were passing *Publisher ST* by and Timeworks wasn't doing anything to keep pace. If *Current Notes* wanted to be a good example of Atari desktop publishing, a change, sooner or later, was inevitable.

Last week, I decided to bite the bullet and give it a shot. Now, some 60 hours later, with the issue just about completed, I find myself just as comfortable working in *Calamus* as I was in *Publisher ST.* It wasn't all that difficult after all. Between the book and the manual and trial and error, I learned how to design standard layouts, handle headers and footers, put in appropriate page numbering, import and export text, master fonts, absolute versus relative line spacing, text rulers, the editor, macros, raster graphics, and much more. Next month, I expect, the whole issue can be completed using *Calamus.*

I enjoy learning new skills and being "good" at what I do. Computers provide ample opportunities for people to improve both their skills and efficiency. It just takes a little learning and a little experience.

But my experience at home, working on *CN,* is not dissimilar to my experience in my normal job, where I happen to have a Mac II as a workstation. Most jobs involve many things that "have" to get done by a certain time. People are "busy" all the time. Seldom does anyone have the luxury of being able to take time out from work and learn a new computer program. How many firms purchase computers and software for their workers and then, with a minimal amount of training, expect people to continue doing all the things they have been doing *plus* master their new workstations? Has it ever occurred to anyone that when software comes with a big fat manual, somebody is expected to read that manual?

It is easy to buy newer, more powerful, computers when they are introduced. It is easy to upgrade software and buy new programs that offer new capabilities on the new hardware. But, normally, you don't buy new people. And, if the people don't have time to learn to productively use new hardware and software, how can American businesses really get an effective return on their computer-related investments?

ST Selections

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*Price varies due to Ram Prices old style 520 ST/1040 Boards	
☐**SPECIAL 1040 STe**	**379.99**
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☐Publisher ST	$49.99
☐Scanart Library	$39.99
☐PageStream 1.8	110.00
☐PageStream Fonts Disk	$23.99
☐Calamus	149.99
☐Calamus Font Editor	$59.99
☐Calamus Outline Art	159.99
☐Hand Scanner & Touch-Up	325.00

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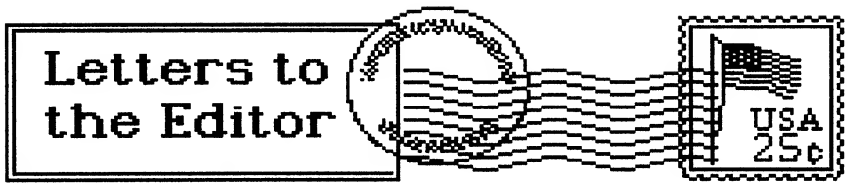


Help for French ST

Dear Joe, Joyce, et al,

I can think of no simple solution to Dana Davis' problem (converting a French 1040STFM to American current); however, some thoughts I have are:

The frequency of the power supply is of no consequence, as all operating voltage inside the ST is DC. Easy solution is to buy a Best power supply for about $85.

Rather than change a keyboard chip, replace TOS with rev 1.4; this should replace the desktop with an English one and map the keyboard to QWERTY; then either moving keycaps around or placing stickers with the new characters on them should complete the job. Approximate cost $80 to $100 for TOS.

The most elegant and possibly most cost effective solution, though most expensive, would be to send the French ST back to France and purchase a new 1040 STE for $399.95 plus freight from E. Arthur Brown Co. The STE could then be sold before returning to France. (I am assuming that Dana is a student, and will be returning to France; not just someone thinking that a foreign ST purchased cheaply may be easily and inexpensively converted.)

Sincerely,
Leon Bonam
GE Mail

The AMC of Computers

Dear Editor,

I've had a 520 ST since December, 1986. I bought one then because I disliked green screens and I couldn't afford a Mac. Today we have a Mac SE, which my wife uses, but I and the children continue to use an ST. The fact that the ST is still state of the art (although, granted, not leading-edge of the art) is an indication of just how good the original design was. The same can't be said for the original IBM PC and Mac.

It is true that in the U.S. the ST is a cult computer. That is not the case in Europe. I think we have to give the Tramiels some credit for recognizing that with limited resources it is better to find a marketing niche somewhere else than to try to bash through a concrete wall when one can't afford the proper tools. This is not to say mistakes haven't been made.

MS-DOS became a standard because it came in on the IBM vehicle. American industry more often rewards security over risk and buying IBM hardware was the safe thing to do. The MS-DOS world is still a kludged environment that goes all the way back to Intel's original decision to base its first microprocessors on calculator architecture. The Mac was a better idea, but Apple survived through the period of its crippled original Mac platform on the strength of the Apple II's reputation and installed base. It was Postscript that finally created a spot for the Mac in the marketplace.

In automotive industry terms, MS-DOS is GM, Apple is Ford, Commodore is Chrysler, and Atari is AMC. AMC made some good cars, in fact it had a virtual lock on the 4-wheel drive market, but it never could break away from its Rambler image. When better cheap cars were imported, it lost its main marketing niche. As a farmer and specialty crop producer (native grass seed), marketing niche is a concept I understand well. In a market economy what's most important is not what you can produce, but what you can sell.

So what is the role of Atari in the American market place? I don't think it's with the TT. As good a computer as it is, its market niche is fully occupied. Frankly, I think the old ST sled in its latest 1040 STE reincarnation still has the best shot. Here are its strengths: physically simple (only 2 basic components: keyboard and monitor), user friendly interface, the only computer system that will give excellent service with only one floppy disk drive, capable in its basic, cheapest form of doing almost anything one asks a computer to do, easily connected to a wide variety of inexpensive peripherals, good, diverse and extensive software base, easy to tie into other systems with emulators.

Sounds like a home/student/club computer to me. That, however, is a marketing niche that no one has cracked successfully, not Apple, not MS-DOS,. Right now it's occupied by Typewriter-based word processor systems. Does this market need 33 Mhz, and 100 meg hard drives? No. Is the market open to development? Yes, even though past attempts have failed miserably. But how does one do it?

First use the 1040 STE as the main platform, combined with the excellent Atari monochrome monitor or a color multi-sync (with all its various input options intact), bundled with a versatile, but easy to use graphics-based word processor, scalable outline fonts and some good and diverse PD software as a bonus. Put a 15 Mhz 68000 into the 1040 STE (as is being done on the Mega STE). Does the market need speed? No. It's simply a comparatively inexpensive marketing tool. Let the user choose his own printer.

A student could buy a low end system (monochrome and 9-pin dot matrix) for a couple months' average car payment. Even with a Deskjet 500, we're talking potential street price of under $1,100. Do you know how many churches or clubs put out newsletters in this country and could afford or have

members who could afford such a system? My 12 year old gets A's on almost all his research papers because he uses an old ST, an old version of Word-Up, and an early model Deskjet to write with, the same as I am doing now with this letter. Whenever my friends see my printed output, they ooh and ahh over the quality, yet all of them have access to and use computers.

The Atari is still a Rambler. That is its marketing niche as perceived by the American public. Don't fight the public. They know what they want. Just as is true for human beings, so for companies and their products it is best to develop one's strengths, to develop who you are not what you are not.

Thank you.
Sincerely,
Fred Schumacher
Eveleth, MN

Updates for Me!

Editor:

I really must take exception to H. Earl Hill in his leadoff comments in the March issue article "Utilities Plus" lest software developers out there think that his "continual irritation" with frequent updates is shared by all users out here. Personally, I prefer frequent updates to be available to correct even small bugs, which can be irritating in themselves.

Some of these relatively small changes may indeed not be significant to the general user, but very much so to particular users. For example, I have encountered a few programs which had only a small error that precluded full compatibility with the Moniterm monitor. To most users, this is a "so what" fix. But to us Moniterm owners, it is a critical upgrade. I would really hate to wait until a generally significant upgrade became available.

I say keep bringing the upgrades coming and let us users make the decision whether it's worth getting. To do this, however, we do need to be informed. For this purpose, it sure would be nice if developers would adopt a standard update text file on the bulletin boards that provides an update history including information for all version numbers. It should very briefly state what each upgrade provides in a telegraphic style. It need only make sense to current users. Then the developer can freely polish his/her "labor of love" with a free conscience, knowing that the choice has been left where it belongs, with the honestly informed customer.

Bob Wenham
Fort Worth, TX

Nix on 4-Color IBM

Dear Editor,

I'm writing this letter because I'm quite upset with the purchase of an IBM emulator the Supercharger.

On Oct. 24th 1990, I purchased a Supercharger after reading the advertisement by Talon Industries in your magazine. I purchased the Supercharger from 1st Stop Computer Systems. The Supercharger was supposed to be the best emulator yet.

Well, as an IBM emulator it's great. DB Man III works great, boots fast, and is easy to use. Here is the problem that has me so upset.

Have you ever tried to play games that are only in red and blue? So I called Talon about this problem, and that is when I found out that the Supercharger only runs four colors: red, blue, white, and black. Talon also informed me that sometime in 1991 they will have a chip available (286 chip) that will emulate the IBM 286 and give me 16 colors. But I will need a multisync monitor and they suggested the Acer at $450, and to use the multi-sync monitor, I will also need the Omniswitch ($89) and then this should give me colors almost as good as the ST.

Talon also informed me at this time that in the 1991-1992 time frame, they will have a plug-in module for the Supercharger that will give me VGA graphics and colors for around $190. That all amounts to $1,168 plus S/H with the purchase price of the Supercharger.

For less money than $1,168, I could purchase a high grade clone that will give me all this now, not a year to a year and a half from now.

I called 1st Stop Computer Systems and explained to Ginger (1st Stop sales rep) that I was not satisfied with the way the Supercharger functions. Ginger was very sympathetic and said that 1st Stop would let me return the Supercharger unit but that there would be a 20 percent restocking fee, a cost of $90 to me plus S/H.

I'm sure that in the next year to year and a half, the Supercharger will be the 100 percent product that Talon advertised. But the cost and time involved just doesn't seem to be a good investment at this time.

In closing I would like to say that I don't expect to see this letter in your magazine because it isn't favorable to the Supercharger. But if it makes it, my advise to anyone that wants to purchase an IBM emulator, make sure it will do what you want it to. Call some user groups and call the manufacturer and have all your questions answered before buying. This will save you a lot of grief in the end.

Thank you,
Ed Lasky
Levittown, PA

P.S. I had no problems with 1st Stop Computer Systems. They went out of their way for me and I can't thank them enough. If you print this letter, please make sure everyone knows this.

Send
"Letters to the Editor"
to:
CN Letters
122 N. Johnson Rd.
Sterling, VA 22170.

STe's Hot Sellers, MegaSTe Is Here, Lynx on TV, Sam Tramiel Meets the Press, Atari Vows Mass Distribution, "Strategic Partnership" with Dealers and Tax Time

The Administration, The Numbers & ST Notepad

The quarterly and even the monthly release by the U.S. Department of Commerce of "the numbers" about the economy attract increasing public attention as we continue in our recession. Various members of the Administration, sometimes including the Chairmen of the Federal Reserve Board, Allan Greenspan, try to put a positive zip on the ball, e.g. "the numbers this month suggest the recession is about over," when, in fact, there is no basis for such positivism. But if the Administration can do it, why shouldn't Atari and their loyal users at least tout encouraging numbers when they appear. In that vein, a survey of dealers around the country suggests that the 1040 STe is a runaway wonder, selling hot and heavy. One dealer on the east coast cites 100 sold in the last month, another 24 and so on. Such news is encouraging, particularly with the news of two new ST computers, shown at CeBit in Hanover (article on page 10). And when you add "the spin," it makes you think the ST is breathing down the neck of long distance runner, Mr. Macintosh. Part of the spin is that Atari's stock has been bubbling higher, ever higher in the last month, up as much as 50% at one point. Admittedly, this is movement between $2 to $3 a share, but up is up. And finally, one Mac user called Microprose to enquire about buying the original air-combat stunner, *F-15 Eagle Strike II,* as well as *F-19 Stealth Fighter,* only to be told they didn't exist for the Macintosh, because there wasn't a big enough user base!

Electric Press Conference

Not in his rectangular office, but in the electronic oval of Compuserve did the President adroitly field the questions lodged at him. The President of Atari Corp, Sam Tramiel that is. And the reporters gathered together to badger the

man, if rather politely, were the other members of the Atari roundtable, one evening, near the end of February. There was considerable interest and a surge of questions about the Portfolio and what new hardware for it might be in the offing. Tramiel pleaded the 5th on this as he did on almost all questions re products that might be released in the future. Exceptions were the coming Atari game machine, Panther, which won't appear until early next year, and his remark "...we are definitely working on new portable machines." On the TT and Unix, he offered an "educated guess" that the TT, itself, would be selling in the U.S. when you read this. Unix is another matter. It was shown in Hanover, Germany at CeBit '91 last month, as Unix System V.4, with x-windows, Motif, and a front-end named "Wish." Does that mean the first TT's selling in the U.S. will also have UNIX?

Atari has announced that it will have a "strategic relationship" with its dealers. The several hundred former dealers of Atari's products that have since gone on to greater deeds and products might rise as one unified ghost and ask just what does that mean. For them it was "shabby" treatment, lack of concern, and Atari's feeble marketing practices that drove them out of business. And for the current dealers, Atari's "Strategic Partners?"

When Sam was asked about a differentiation in dealer status, with some dealers who have been untiring in their support of Atari being afforded "second class status" his reply seemed to lack specificity. "We plan to support our long-time dealers even more than we have in the past. Gregg Pratt, who was our corporate CFO, is now President of Atari U.S., and is making a big effort to build up a team to support all of our dealers. We are looking for dealers who really understand our products and who will be there to support you."

What the dealer sees, however, is a new Atari effort at "mass distribution," read being sold by chains like Circuit City, should they agree to do so, with no particular "Bouquet for Dealers Only," with the exception of the pricey TT, which is unlikely to achieve a very sizeable user base, i.e. result in big sales and serious profits for the struggling dealer. So despite Atari and Mr. Tramiel's best intentions, which have obtained for over five years as Atari's dealer network be-

gan its collapse, and which have been loudly touted during these last several "Year of Atari's," there is no evidence that anything new is being added to the dealer equation. Let us hope that mass distribution works. The more machines out there the better for current users. But honestly put, it can be of little joy for dealers to contemplate competing with discount chains, should that come to pass.

Could It Be?

The Mega STe's are just beginning to arrive in the U.S., with the initial supply going mostly to developers. But one dealer, L & Y, of Woodbridge, Virginia, called *CN* to advise they had just received their first two machines, and were highly impressed with them. Apart from the speed, the power and the new capacities of the machine, were little details, like the joystick port and the reset button being accessible on the side the computer.

The Mega STe will retail for $1750 with 2 meg of RAM. Since the 1040 STe is now selling for $399 with one meg, upgradeable to four meg for circa $200, this is still quite a price difference, despite the hard drive in the Mega STe. But then the Mega is bigger, faster, and better; a machine that a current Mega ST user might think of upgrading to, whereas the 1040 STe would show a Mega ST owner little or nothing that is new, but a tedious wait for software to arrive to demonstrate its charms. Now there is a rumor abroad that the Mega STe ROMS will function properly in a 1040 STe. Thus, once Atari makes the ROMS available, should that ever happen, you should be able to upgrade the operating system as well as the RAM memory of your 1040 STe and turn it into a powerhouse computer. Conversely, will the Mega STe with a VME expansion slot be able to utilize the TT's SC1426 monitor and its greater capacities? Theoretically, when the VME bus cards become available, and they will, they should fit in either machine. If all this proves true, Atari is to be commended for striving for continuing compatibility.

Dial 1-900-Lynx

Were the tired eyes of the Publisher of *Current Notes* deceiving him. Was that blur on the late, late-movie screen, with its limitless onslaught of ads for everything from slicers to "sensuous chats," an Atari advertisement? Yes, indeed, within an hour the Publisher had seen his first two TV ads for Atari, for the Atari Lynx. There was Atari telling the four kids on a couch about the joys of the hand-held game machine, with color and dozens of cartridges. And then the blur was over, and the next ad was for a dial 1-900 number and a dream of a time talking with a beautiful voice on the other end. Who says Atari doesn't advertise its game machine on Saturday morning. This was Saturday A.M. and there was the ad, followed by a 3 A.M. preview of coming movies.

Two Winners

Super Boot and SLM 804 laser printer users may now smile. Significant improvements for both are available or on the way. The author of *Super Boot*, the all powerful desktop that lets you select your accessories and auto-boot programs each time you boot up, is Gordon Moore. Those of us who use his product daily can now look forward to a new release, Version 7.0. The new features include digitized sound, which means you can load a single sound, a random sound, or even link sound files to pictures. You will also be able to change your Startgem program within the SUPERBT. PRG, as well as change and save the function keys within the program. More? Yes, there's an optional attention bell, and you can link date/time settings to function keys, allowing flexibilty in setting date/time for programs. Well, done, Gordon Moore.

And laser users, the hum and heat and excess use of electricity of your Atari laser is a thing of the past. As I type, Widgets by Decker's Phantom of the Laser hovers silently over my dormant laser printer, loading and unloading my files into my computer as I power up and power down without turning on my laser printer. It seems like such a simple thing, a little board installed inside the laser interface box, with its own low-drain power cube attached to the box. Once that is plugged into a socket, the green ready light on the interface box glows, the Phantom does its work, convincing the switched-off printer that it is "on" and operations can begin. Simple it is, but you constantly marvel at it, as you listen and hear nothing, or when you switch the printer on, in the middle of a desktop publishing chore. Gone is the internal heat buildup that accompanied what some call the "Backdoor Fix" and what we call the Jeff Greenblatt solution (he discovered that if you opened the back door of the printer, much of the hum and some of the heat would cease). The major inconvenience is quickly over. You UPS Widgets your interface box, plus $40, and Steven Decker immediately installs and board and the 12 volt power cube and can, if you elect, have it back to you by overnight UPS. We believe the Atari SLM 804 laser is one of Atari's superior hardware products. Steven Decker has made it even more of a pleasure to use. *(Widgets by Decker, 2399 SW Palisades Crest Drive, Lake Oswego, OR 97034; Tele:503-638-3940).*

Death, Taxes and the ST

There are now only two tax programs that will run without emulation on the ST. One is *Tax Wizard* from MacDonald Assoc, $49.95; Tel: 1-800-800-2563. The other, $20, is available from Steven Karasek, Tel: 314-961-2052.

CeBIT '91 Newsbreak

by Tom Harker

Hannover, Germany, March 13, 1991. Things are really heating up here today in Hannover, Germany at the 1991 version of CeBIT which is the largest computer show in the world. Atari surprised everyone with their announcement and demonstration of two exciting new 68000 based computers. The following was described to me by Atari engineers as they were demonstrating the equipment. I have written this because I felt it newsworthy and an important boost to the moral of Atari users everywhere. I make no guarantee for the accuracy of this information but I have tried to get as much detail as possible. The computer names used are only "internal" Atari names and may be changed before release of the products.

ST Notebook

This is said to be the smallest 68000 based computer in the world. Its size rivals any PC Notebook style computer that I have seen. It is about 1/2 the size of my laptop computer and maybe 3/4 of an inch thick. Features include:

- A built in mouse device that consists of three buttons. The large center button is direction and possibly velocity sensitive to simulate mouse movement in direction and speed.
- A laptop size keyboard, possibly a little smaller than standard. The tactile feel was good.
- 512K ROM capability. It looked like TOS 2.05 was shown in the prototype. This prototype did have a very professional and finished look to it.
- 1 megabyte or 4 megabyte RAM versions available. Uses pseudo-static RAM.
- 2 1/2 inch form factor internal hard drive. 20 megabytes was installed. Presently up to 60 megabytes is possible. Probably an IDE (AT) interface.
- External ports include midi in and out, 1 serial, 1 parallel, 1 combo either floppy drive OR ACSI, 2 RAM card slots (128K cards shown, said to support up to 4 megabytes), 128 pin computer direct port (all address, data lines, CPU control, etc.), modem connector (for optional internal voice/fax modem), keypad/mouse port. Of course to maintain the small size, nearly all connectors were shrunk and non-standard types.
- An excellent gray-tone LCD display. It did not appear to be backlit which would make sense for the battery life. This was said to be greater than 10 hours before recharging. With less hard drive use, it would be longer.
- The replaceable battery pack shown was very small and contained about eight AA alkaline batteries. If Ni-Cads were installed, the universal power supply would also recharge them when connected. When the battery pack goes down, the notebook is automatically put in a halted state that is maintained for weeks until recharged. Internal Ni-Cad batteries will maintain the halted state of the computer for about 5 hours if the battery pack is removed from the computer.
- Atari has a few choices to transfer data to and from the computer. Connect an external floppy drive. Transfer over the serial ports with a modem or direct. Transfer over the parallel ports at around 20 Kbytes/sec. Connect an ACSI device such as a hard drive externally or possibly ACSI to ACSI communications.

ST PAD

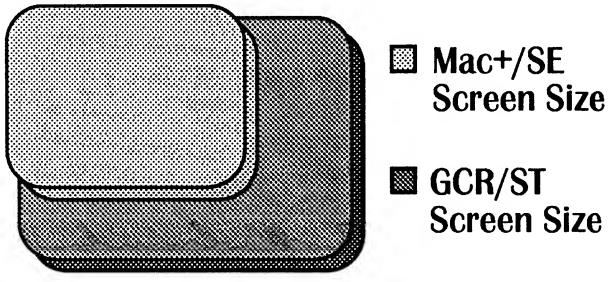
This is similar to ST Notebook and shares most of the features but has a futuristic interface. A touch sensitive LCD display with a pointing device was shown for mouse type functions and handwriting recognition for input. Physically, ST Pad looked like the "Etch-a-Sketch" drawing toys that we grew up with minus the X/Y knobs. No keyboard was attached and there is not an internal hard drive. The OS software and large amount of scratchpad RAM were said to have Artificial Intelligence features to allow ST Pad to actually learn your handwriting style! (Good luck with mine.)

ST Pad looked like it needed more time for completion but ST Notebook looked like something we may actually see sometime this summer or fall. With this exciting new innovative line of computers and Alwin Stumpf (from Atari GmbH) heading up a new world-wide marketing campaign, it appears that this time Atari really may be backing the promise with the product.

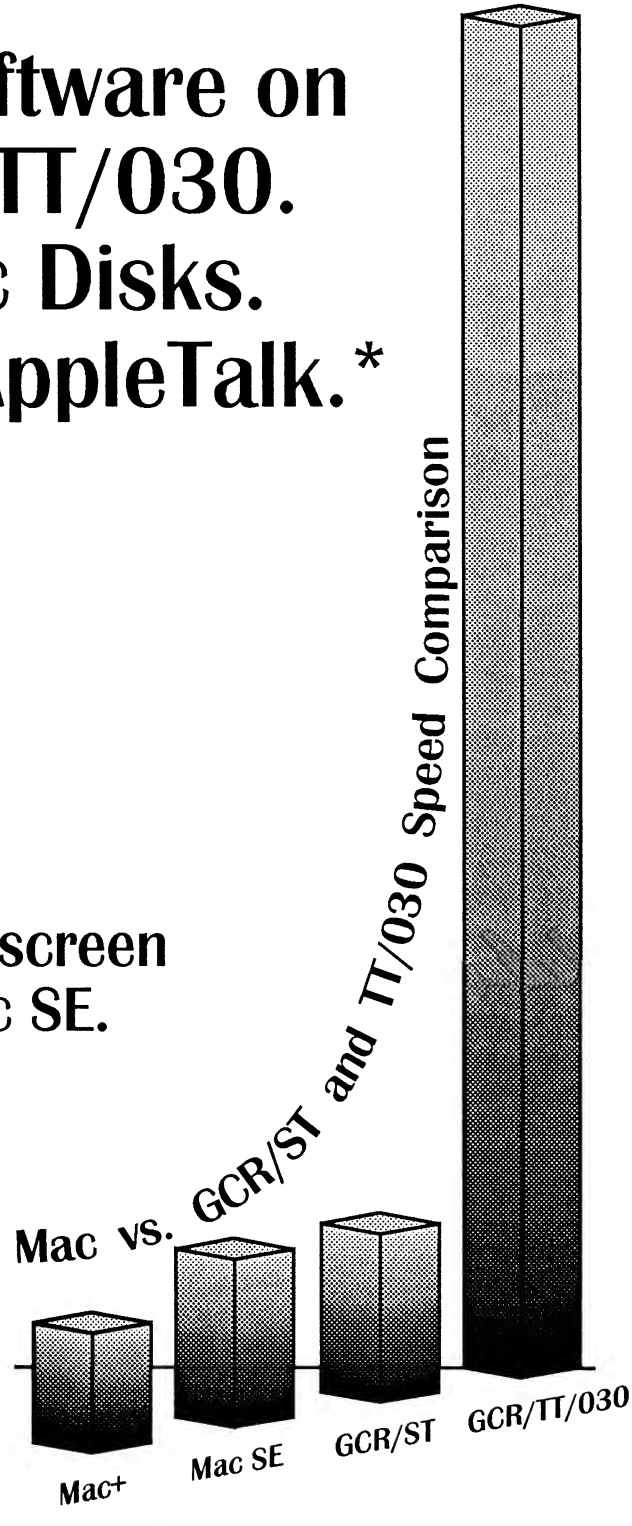
This is Spectre GCR

GCR Runs Mac Software on the Atari ST and TT/030. GCR Reads Mac Disks. GCR Also Speaks AppleTalk.*

Mac vs. GCR/ST Screen Size



GCR has a 30% larger screen than a Mac Plus or Mac SE.



GCR is at least 20% faster than a Mac Plus.

Gadgets by Small, Inc.

Suggested Retail: $299.95
(Mac 128K ROMs not included)

40 W. Littleton Blvd.; #210-211 • Littleton, Colorado 80120 • (303) 791-6098 • Fax: 1-303-791-0253

* Requires Atari Mega ST and MegaTalk.

Atari's corporate attention is everywhere but on us 8-bit holdouts. As Atari's most visible corporate representative, Bob has to align his priorities with those of upper management regardless of his personal sympathies. I would note that Bob's response to my inquiry was logged onto GEnie at 11:00 pm. At the risk of sounding like a paid mouthpiece, I think I'm starting to like this guy. Under his Korporate Veneer there just might lurk a pretty decent fellow who really earns his pay. Atari would do well to hire a dozen more like him.

I also sent E-mail to *Explorer* about the 8-bit omission and received a sympathetic response from editor John Jainschigg. He promised to look into it and publish a list of 8-bit products in a future issue. My assessment of this affair is that it was probably an innocent oversight rather than a back-handed attempt by Atari to give the snub to us 8-bit diehards. Time will tell.

Has anyone seen a copy of *Atari Interface Magazine* (AIM) lately? A year ago I considered AIM just another user-group rag. But folks, AIM is coming up fast on the outside. Fifty-six pages with classy full-color covers. *Current Notes*, watch out! In these days of waning 8-bit coverage in *STart* and *Current Notes* (despite my efforts), AIM's 8-bit coverage seems to be holding its own. Most intriguing are AIM's plans to come out with a monthly 8-bit disk beginning with the March 1991 issue. By the time this appears in print, we will know whether the ambitions of Bill and Patty Rayl at AIM were successful. If so, AIM will be the only magazine sporting both an 8-bit and an ST monthly disk. If this bit of news warms your 8-bit hearts, contact AIM at Unicorn Publications, 3487 Braeburn Circle, Ann Arbor MI 48108, (313)973-8825 voice or (313)973-9137 BBS.

Twilight Sources

Ultrabasic, Inc. probably classifies more as a specialty producer than a PD/shareware distributor, with a limited selection of 8-bit software offerings that includes *SuperFrogs*, *FunSpeller*, *Tank Math*, and *Track Stack 2.0* for $10 each. *SuperFrogs* is a collection of seven different arcade games while *FunSpeller* is a six-game compendium of educational word games for all ages. *Tank Math* is an educational arithmetic tutorial, and *Track Stack* is a game utility that allows you to transfer up to 15 games to a disk and load them from a menu with one keypress. Also in the inventory is *RC T.O.T.A.L.*, a race monitor for track racing, $50. Contact Ed Sabo at 10 East 10th St., Bloomsburg PA 17815, (717)784-4545.

N.E.R.D.S. Software (actually stands for National Educational Report Drawing Services) is another specialty producer with a sharply focused inventory of *Print Shop* graphics. Unlike PD collections of random PS graphics that contain a little of everything, the NERDS disks are well organized along educational topics. There are four disks of maps, two disks of biology subjects, the periodic table, and others. Some of the disks are available as Quick Pix conversions for use with popular 8-bit word processors such as *AtariWriter* and *PaperClip*. Prices run from $3 each to $15 for a two-disk set. Contact Don Loeffler at N.E.R.D.S. Software, 18 Wendy Drive, Farmingville NY 11738.

80-Column Switcher

Like most 8-bit enthusiasts, I was ecstatic when the release of Atari's XEP-80 video interface was announced in *Antic* over three years ago (Charles Jackson, "Miracle Box from Atari": *Antic*, July 1987, p.26). Equally exciting was the announcement of a new word processing program, *AtariWriter-80*, that uti-

lized the features of the new hardware to give us a sharp 80-column word processor that would rival Big Blue. It all sounded like something I just had to have, and I started dog-earring the ad pages in my magazines.

Frustration and Surprise

In the ensuing months, mailorder retailers advertised tantalizing deals on bundled packages containing the XEP-80 and *AtariWriter-80*. Between the summers of 1987 and 1989, I placed no fewer than 10 calls to dealers offering these bargains, always with disappointing results. The retailers had to place their ads several months ahead of publication time, and they had been promised that by that time they would have the products to ship. They all had XEP-80's to sell, but no one had received *AtariWriter-80* yet. When did they expect to receive the new software? Answers ranged from "Real soon now" to "Maybe another month or so." I had made an "executive decision" not to purchase the new hardware until my favorite word-processor software was available for it. After nearly two years of runaround, I gave up. I plunked away with my old AtariWriter ROM cartridge and resigned myself to a lifetime of 40-column video.

Imagine my surprise, then, when Atari unceremoniously released *AtariWriter-80* in the final quarter of 1989! I wasted no time: before the end of the year I had added an XEP-80, *AtariWriter-80*, and a new Epson 24-pin printer to my 800XL-based system. It was 8-bit word processing Nirvana. Two impressive reviews of the new software (by Stan Beville in *Current Notes* Oct. 1989 and Mat Ratcliff in the Jan. 1990 *Antic*) convinced me it had been worth the wait. I even purchased a second XEP-80 to use at work.

Honeymoon with Medusa

After the initial glow had worn off my new XEP-80, I found using it required the development of some annoying habits. Although word processing consumes perhaps 50% of my computer time, and BASIC looks nice in 80 columns, there are still plenty of other 8-bit programs I use that run quite nicely in 40 columns--like the *SpartaDOS* menu, and *Print Shop*. Those 40-column programs output their video from the jack on the rear of the 800XL. To use them, I had to unplug the XEP-80 video cable from the rear of my monitor and replug the cable carrying the monochrome video signal from my 800XL. Like most 8-bit systems, the back side of my XL is a snake's nest of wires: the XEP-80, three 1050 drives, two printers, interfaces, modem, and all their supporting transformers and power supplies make for a tangle worthy of Medusa. I hate fumbling around in that mess back there to connect and disconnect things.

Fumbling in the Medusa mess wasn't the worst of it. Each time I changed plugs, I found I had to spend several minutes re-tweaking my monitor controls to achieve a satisfactory display. It seemed the monitor settings that gave me the most pleasing 40-column display gave an 80-column display that was unreadable due to excessive horizontal shear. So when I tweaked up the monitor for 80 columns, it was all out of whack when I went back to 40. I sensed there must be some compromise horizontal setting on my monitor that would give a stable display for either mode, but to find it I had to be able to switch rapidly back and forth from 40 to 80 while making the adjustment. I needed an 80-Column Switcher!

Make the Switcher

The Switcher is simple to build, and all the required parts are readily available. Referring to the diagram in Figure A, you can see the Switcher is basically only a DPDT switch with a couple of resistors connected to provide a termination for the unused video input. I used 75-ohm resistors in the unit pictured in Figures B and C, but the exact value isn't critical. You could use more commonly available 100-ohm resistors, and that value will serve just as well. By providing a resistive termination for the unused video input, undesirable RF emanations from the computer (which might interfere with local TV reception) are suppressed.

The Switcher should preferably be mounted in a grounded metal box, as seen in Figures B and C. Video connections are via panel-mounted RCA jacks. Wire used to carry the video signals should be shielded RG-59 coaxial cable. You will also need some short lengths of plain bare wire, and a ground lug, for ground connections. The exact metal box I used might not be available any more, but Radio Shack offers a variety of small metal project boxes that will do

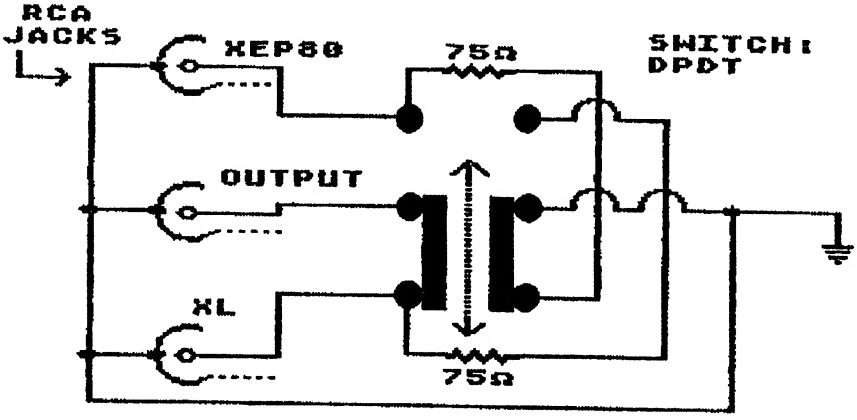


Figure A: Switcher Schematic

Figure B: The Switcher

fine. I used a bunch of fancy hardware to mount my switch, but just about any old DPDT switch will do--a panel mount toggle type would be easiest to use. The switch, resistors, coax cable, bare wire, ground lug, RCA jacks, metal box, mounting hardware, and necessary solder are all stock items at any Radio Shack store.

Once you have everything, drill appropriate holes in the box for the three jacks, switch, and a screw to fasten the grounding lug to the metal case. Wire up everything according to Figures A and C. The ground shields of the coax cable should be connected together with a good ground connection to the case via the ground lug. You can go ahead and label the three jacks "XEP80," "OUTPUT," and "800XL" (or XE, whatever) as shown in Figure B, but you might want to hold off labelling the front panel until you've had a chance to use the Switcher and verify the correctness of the switch positions. I used an inexpensive Dymo tape label gun to make durable labels.

Switcher Saves Sanity

I've been using my Switcher for about a year, and it has saved me a lot of aggravation. The first thing I did upon connecting it up was to tweak my monitor to achieve a horizontal setting stable to either 40- or 80-column mode. The intermediate setting wasn't difficult to find with the aid of the Switcher.

To find the optimal setting, I set the Switcher to 80 columns, turned on my XEP-80 and booted up *AtariWriter-80.* I adjusted the monitor for a stable display in 80 column mode, then filled the entire screen with capital M's. (The M is a good symbol to use for monitor adjustments, especially focus, because the center pixel of the M is so close to the adjacent pixels that any abnormality is easily seen, especially with a magnifying glass. In addition, screen nonlinearities or intensity variations are easy to spot since these will upset the very regular pattern of full rows and columns.)

Next, I turned off the 800XL but left the XEP-80 still operating. (The XEP-80 employs a 6264-type static RAM in its memory configuration, so it will continue to display the last screen in its memory even after cessation of input data.) I then plugged in my trusty old AtariWriter ROM cart and booted up the 800XL again. I set the Switcher for 40 columns, readjusted the monitor for a stable display, and again filled the screen with capital M's. Finally, by rocking the Switcher back and forth from 40 to 80 while adjusting the controls on the monitor, I quickly located the control positions that gave a stable display in either mode without further adjustment. I completed the adjustment by touching up the monitor's focus and centering controls.

I now routinely switch between 40 and 80 column displays without giving it a thought. And there are a few programs, such as Bob Puff's splendid *BobTerm 1.21* terminal program, that permit you to use 40 columns and 80 columns at the same time: the Switcher gives me maximum flexibility when I go online with *BobTerm.* True, the Switcher did add even more wires to the Medusa mess. But I only had to hook it up once, and today that nasty business behind my computer is but a memory.

Until I hook up my hard drive.

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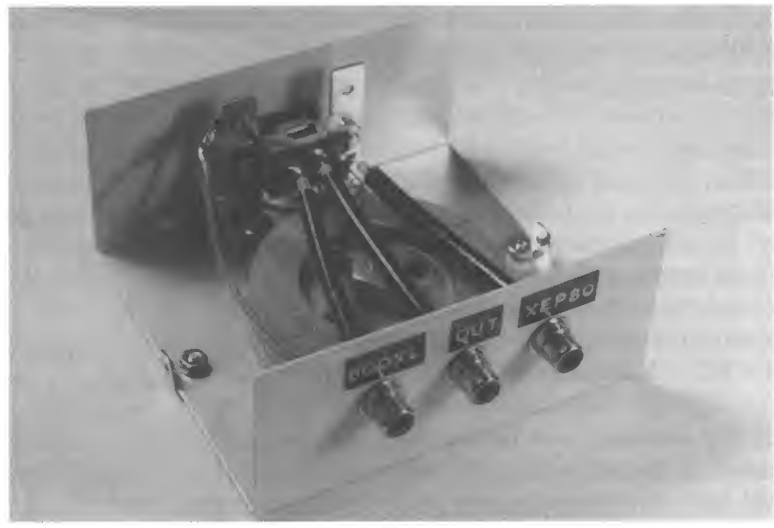

Figure C: Interior and rear panel of The Switcher. Large round object is a heavy flywheel (from an old hi-fi tuner) bolted to the chassis to give it weight.

What, Me Copy?

Has Technology Made Us All Crooks?

by Mike Heininger (c) 1991

Personal Ethics

Why this furor about software copy protection when, obviously, manufacturers are talking about somebody else when they yell piracy? Or are they? Laws and lawyers and litigants abound, but throughout society there is considerable debate, not to mention finger pointing, when people consider the fine line between fair use and theft.

In this article, I first of all *disclaim any responsibility* for any conclusions you may draw and problems that may result from reading my opinions about copyright ethics. As a long-time public relations practitioner in and out of government, and a would-be author and composer, I have more than casual interest in copyright but do not claim infallibility.

The problem of finding computer software not cumbersomely inhibited by copy protection leads to introspection about why there is a problem anyway. Are people really so dishonest? What about users like you and me--are we part of the problem or the solution?

For issue guts, there is no escape from going to a library and studying the Copyright Revision Act of 1976, which went into effect January 1, 1978. To get copyright forms or circulars, write to the United States Copyright Office, Library of Congress, Washington, DC 20559 or call its 24-hour hotline (202-707-9100).

Dare to Test

Take this little test to pinpoint your true attitudes toward copy protection (answer yes or no):

1. Have you ever copied someone else's answer on a school examination?

2. Have you ever photocopied a substantial portion of a book, magazine, pamphlet, or other for-profit publication?

3. Have you ever made a tape copy of a record or compact disc?

4. Have you ever videotaped a commercial television program?

5. Have you ever videotaped a copy of a rental videotape movie?

6. Have you ever scanned a magazine photo into your computer and printed it on a newsletter to other people?

7. Have you ever let someone copy answers from you on an examination?

8. Have you ever memorized the letter chart to pass an eye examination?

9. Have you ever violated any oath you have taken, including marriage vows?

10. Have you ever used a software program to break the copy protection scheme of another software program?

11. Have you ever read an entire magazine article at a bookstore so you wouldn't have to buy the magazine?

12. Have you ever ripped a page out of someone else's publication so you wouldn't have to copy the information by hand?

What's that on your brow--little beads of sweat? If you answered yes to any of these questions, you are, there is no nice way to put it, a CHEAT! Yes, a crook! Fortunately, like most of life, cheating is a matter of degree, brimming over with mitigating circumstances. One person's sin is another's peccadillo.

But if you deprive anyone of income by illegally copying something, you could have to pay a stiff fine and/or go to jail.

Blame Technology?

A popular contemporary excuse for cheating is that technology is making crooks out of us all. It is so easy to copy nearly anything nowadays that if copying were so wrong, why would the equipment be so available?

The fallacy in this argument is obvious. Any product can be abused, from handguns to hammers. Because some people use copying technology to cheat creators does not mean everyone should be denied access to the equipment. Machines don't cheat, but some people do. When complaints surface about unauthorized copying, they usually are for such gross violations that fair use doctrine clearly has been breached.

Fair use is key to understanding copyright. Like most laws, the copyright law is not easy reading. You can find it in United States Code, Title 17--Copyrights, revised by Public Law 94-553, Title I, Section 101, Oct. 19, 1976, 90 Stat.2541. Within the law's 135 pages is Section 107, which says fair use includes +criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research."

Fair use must consider the purpose and character of use, e.g., the commercial or nonprofit educational nature of copyrighted work, the amount and substantiality of the portion used in relation to the work as a whole, and the effect of use on the potential market for or value of the work.

Copyright Nature

Section 102 is crucial: +Nature of copyright. Copyright does not preclude others from using the ide-

Copyright Nature

Section 102 is crucial: +Nature of copyright. Copyright does not preclude others from using the ideas or information revealed by the author's work. It pertains to the literary, musical, graphic, or artistic form in which the author expressed intellectual concepts. Section 102(b) makes clear that copyright protection does not extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work."

And this paragraph added for computers: +Some concern has been expressed lest copyright in computer programs should extend protection to the methodology or processes adopted by the programmer, rather than merely to the 'writing' expressing his ideas. Section 102(b) is intended, among other things, to make clear that the expression adopted by the programmer is the copyrightable element in a computer program, and that the actual processes or methods embodied in the program are not within the scope of the copyright law."

Confused? Welcome to the crowd. For computer users andsoftware manufacturers, a key question of fair use is whether and how buyers may make copies of programs. This is the heart of the copy-protection schemes despised by honest users. Some software manufacturers go so far as to insist users only +lease" their programs.

Disagreements over copying rights concerning communication products are common. The consumers' right to acquire digital audio tape recorders is the latest victory in a long series of fights against some interests seeking to restrict access to some technology that, if abused, facilitates unauthorized copying of products.

Aside from certified criminals, why do some people cheat in making unauthorized copies of products? While illegal copying is inexcusable, some of it may be understandable, however painful that may be to our individual sensitivities. To be fair to product users, product manufacturers should consider these possibilities:

1. ***Misrepresented or misunderstood products.*** As the most obvious example, remember the old record stores where you could go in and play the record before you bought it? You knew exactly what you were getting. Today most music must be bought in sealed packages. Sometimes we find that the product, even if we've heard the music on radio or elsewhere, isn't what we expected. We feel cheated. Book stores, hardware dealers, even automobile dealers usually offer a much better idea of product than computer software, unless you have a rare dealer (like L&Y) that actually lets you try the product in the store.

2. ***Volatile products.*** Cassette tapes begin wearing out the first time they are played and get worse through their lifetime. The same is true for phonograph records (except compact discs). But even more volatile is computer software--a heavily used magnetic medium whose disks can be easily ruined. Yet software users often are expected to pay substantial sums for copy-protected disks whose investment is not mitigated by the token red herring of being able to buy manufacturer backup disks.

3. ***Performance degradation.*** Copy-protection schemes inhibit optimum computer performance by slowing loading sequence, restricting hard disk use, and/or interrupting for authorization verification. Schemes that use codes from documents are more palatable, particularly when integrated into game play or software comprehension, but they, too, penalize user productivity and pleasure.

4.***Hardware threatening.*** A few copy protection schemes are so hostile that they lock the system or force reboots that ultimately cause premature wear on computer hardware.

5. ***Overpriced software.*** How much is a fair price to charge for a product? Atari software is much more reasonable when compared to the sometimes outrageous prices asked for some other systems' software. One database that came out for the Kaypro CPM listed for around $700! While sellers are free to charge whatever they want, they shouldn't be surprised that if some buyers consider them cheats for exorbitant pricing, they will have less reservation about making unauthorized copies.

Now let's consider some hypothetical examples of borderlinecomputer software cheating. Answer these questions yes or no:

1a. You are using an expensive software program at work that also would run on your home computer. You cannot afford to buy a copy of this program for your personal use, but you have to take work home that can only be done by computer. Would you take a copy of this software home and use it for doing your office work at home?

1b. Same thing, but would you make a copy of this software and take it for your home computer because someday you might need to do office work at home on it?

1c. Same thing, but would you make a copy just for personal use at home?

FOCUS: This starts out as a question of time use, e.g., theoretically a particular software program could legally be used 24 hours a day forever on one computer. It quickly evolves into a question of how many copies the single user can make if he or she cannot always use the program at one location or on one computer.

2. A friend offers you a copy of a program to try to see if you like it, suggesting that you buy the program at a store if you like it. Would you take it?

FOCUS: This is the try-before-buy question. It's also much like shareware programs, which sometimes are bundled with regular commercial software that does not always alert you in advance.

3a. You have two computers of the same type at home, one used by your spouse and one by you. When you buy a program that you both use but not at the same time, would you buy a copy for each of you?

3b. Same question, but for a program that both of you often use at the same time.

FOCUS: This is a variation of the 24-hour-a-day theoretical use question.

4a. There is a wonderful program you just love but can never afford. A friend offers to give you a copy to use as you wish. Would you accept it?

4b. Same question for a program that you might be able to afford someday.

4c. Same question for a program that you can afford most any time.

FOCUS: This is the question of basic honesty, no matter what the excuses.

We could debate most of these questions for a long time, but this is not necessary to see the main point: honesty has a lot to do with need and resources. If you're rich, you don't have much excuse to steal anything. If your children are starving, you might just steal that loaf of bread no matter how many times you've seen Les Miserables.

Computer Copyright Perspective

So where does this modest examination of product copying leave us? In an ideal world, manufacturers would offer nothing but excellent and affordable products available for store or even home trial. Consumers would appreciate the originality and investment of fine creations and treasure them accordingly, always paying fair market price. Competitors would be too proudto even think of copying someone else's achievements.

Apparently, we have not yet achieved that ideal world. We might get closer, however, if we try to abide by the following:

1. Theft is theft and cheating is cheating no matter how we rationalize them.

2. Any copying that deprives creators and owners of income is wrong and illegal.

3. Any minimum copying that serves to evaluate the product (e.g., excerpts for reviews) might be all right, but ALWAYS check the specific product's restrictions in the manual or disk package.

4. Any copying that serves only to guard against loss of volatile product (e.g., making work copies of master computer disks) may be highly desirable from the user's point of view, but the legality still varies according to degree of permission granted by individual software manufacturers.

Maybe consumers should think of this lesson in rhyme: If we get what we pay for but many don't pay, who will get any more when the products decay? Likewise, manufacturers might consider this verse: If buyer beware means some products aren't right, does copy-protection deter or incite?

68030 SST Accelerator and Lots About the ST:

Part 3

SST Philosophy and Design

by David Small, (c) 1991, All Rights Reserved

Editor's Note: [Here is the final installment in this three-part series. Part 1 discussed video displays, Part 2, video RAM and accelerators. The final chapter discusses the 68030 board designed by Gadgets by Small. -JW]

Well, one easy way to do a 68030 board is to put a 68030 and a small, 16K cache on to a small circuit board. That way, you get okay performance in benchmarks (in particular, that's important for ads; even if real world speed isn't 8 times that of an ST, having some benchmark say 8 times is good ad copy).

However, this didn't turn me on much. Heck, I've OWNED a 16K cached machine, as I've mentioned. I've also owned 16K cached ST's, with 16 Mhz 68000's, in accelerators. In some things, particularly mindless benchmarks, they claimed a full 16 Mhz worth of performance. In other things, like the stuff I do a lot of (software development), they just barely sped up the machine.

I mean, to me, it was like buying a ghost accelerator. Sometimes it was there, sometimes it wasn't. And in running programs I considered a fair test, they came out about halfway between 16 Mhz and 8 Mhz--about 12 Mhz performance. But I'd paid for 16 Mhz performance!! This didn't appeal to me at all.

So I began thinking about how to do things *right*I spent a lot of time considering how to kick the video circuit out of memory so that it didn't take up all but 8 Mhz of ST memory. I never found a way. And I saw the computer industry moving around me--computers with faster processors, more memory, and such, becoming available.

Our Own RAM

At that point, the thought hit me: Why not just *add* memory to the ST? Make the memory not accessible to the blasted video chips, so that it's not bottlenecked to 8 Mhz; rather, let's run this new memory wide open, as fast as it can go. And while we're at it, let's organize the new memory "wider." In the ST, when you ask for a piece of RAM, you get a "word," or 16 bits (two bytes). I wanted my new RAM to give me a "long," or 32 bits (four bytes), each time I asked for memory. That way, you don't have to do two requests to fetch in 32 bits of memory, only one, which saves clock cycles (and all that D-RAM precharge and refresh type stuff.) The CPU had to be a 68030, for speed reasons if nothing else. The 68000 just wasn't available above 16 Mhz, and heck, 16 Mhz is not on the leading edge of today's technology (although a *true* 16 Mhz really flies along). The 68030 was available in 16, 25, 33, 40, and 50 Mhz versions, which sounded just fine to me; I wanted enough acceleration to make my ears bleed.

Once the decision came to add memory, we thought about what type. We're in a different age, folks, than even two years ago; dynamic RAM is *cheap* and available in great heaping chunks. Static RAM is expensive and available in small, dinky pieces. We chose dynamic RAM, even though it's a hassle in the design phase, because it meant we could sell the board for less.

There were several reasons for this RAM. First, a program running in this RAM would scream with performance. It would have ZERO video contention. That is very important. It would work in 32-bit big chunks at a time. It would take advantage of a supercharging mode available to the 68030 called "Burst Mode," where the 68030 pulls in the next few instructions much, much faster than normal; you have to design your hardware in a particular way to get it to work, but that was okay.

Philosophically, what sold me on this idea was that ST users need more RAM! We're past the days when 4 megabytes was so much that you couldn't use it all. With Codehead's utilities, you can load lots of desk accessories; Revolver lets you swap between already-loaded programs; sound digitizing programs badly need more memory (digitizing really chews up memory); page layout programs needed more (especially with scanned/image files!); spreadsheet users needed more ... as I listed what people needed, it added up to more speed (68030) and more RAM.

So, we went with 8 megabytes (that's right, twice what comes in an Mega-4 to begin with!) of RAM, standard SIMM sockets. Since lots of people can find RAM SIMMs, we didn't require you to buy ours (and add overhead); just plug in your own. We did give you the option if you couldn't find a supplier, but the ads of every major computer magazine are crammed with memory SIMM ads. (The Chip Merchant in San Diego appears to be the best to me right now).

This 8 megabytes of memory ADDS to the 4 megabytes already in your machine. It in no way takes that RAM out of the system. So you end up with a Mega-12--a 68030 processor, 12 megabytes of RAM. That's a lot of computer power.

We didn't feel that going past 8 megabytes was prudent. First, there are memory addressing problems; the ST's layout gets squirrely around the 14 megabyte border. Second, there are power supply problems we didn't want to push. Third, 8 megabytes is darn near enough for anyone! I have 8 in my Mac II and have rarely run low on memory; the ST has 12!

If we run into some real memory enthusiasts who want to use 4 megabyte SIMMS, a minor board change can accommodate them, although some real interesting software will need to be written. This would give a 32 + 4 megabyte ST, which ought to be enough for anyone; if not, go buy Apple's Cray machine.

This RAM is special, as I've noted. We've kept the video chip chains out of it, so it runs at its full speed. Nothing kicks the 68030 out of this memory. So we named it fastRAM. If you load a program into there, it will answer your question before you ask. (Just kidding). It will really fly, though, seriously, like nothing you've ever seen.

The 4 megabytes of ST RAM is perfectly usable. However, it's slow; it has video limiting it to 8 Mhz. You shouldn't use it unless you have to--let's say, some program that for a weird reason insists on using it (a programmer who assumed that only 4 megabytes would ever be available on the ST, which is rare). All video and disk access must come through this ST RAM. This is really not a very big deal at all to me--and I have to write the software to make this thing work!

Essentially, video is always directed at ST RAM, and if you try to do a disk access to the 68030's own private fastRAM, it'll read into the ST RAM first, and then be block-moved (and darned fast!) up into the fastRAM. Writing is the reverse; data is block-moved to ST RAM, where the disk can get at it, and written. The performance of the 68030 is so quick that, in my view, it doesn't bog down disk operations. I wouldn't be able to stand it if they bogged down; you'll recall I'm something of a disk speed fanatic, from Twister on up.

Expansion Connector

There's a good quality expansion connector on the SST to allow you to plug another board into it. I'm not completely satisfied with having to work through ST video; I'd like, very much, to see higher resolution in particular (for instance, Super-VGA style quality). With all the R&D in the IBM world on lowering costs, it seems a shame not to take advantage of all these inexpensive, superb quality video chips ...

I am a firm believer in expansion slots and we plan to publish specs on our slot for people who want to do things with it. It is by no means a "crippled" or "low speed" slot; it's a direct line into the 68030's address, data, and control lines, plus a few other goodies that you'll need. If you understand software, and are willing to use mighty fast chips, you can have a lot of fun with SST.

ST Compatibility

The original SST was, of course, designed for the Mega-ST. This is because we had to start somewhere, and everyone on the development crew had a Mega! However, in the USA, a low percentage of ST owners have Megas, and we have no intention of locking ourselves out of the market, here or in Europe. Hence, you can rest assured that 520 and 1040 ST versions are in the pipeline.

I do want to mention that they're going to be tricky, because frankly 8 megabytes of SIMMs just plain takes up room, and generates heat. (The 520/1040 *have no fan* and heat-related failures are legion in computerdom). One technique that has been mentioned to me many times is to place the 520 inside an IBM clone case, leave the top off, and plug the SST in; with a few dollars worth of 64-pin sockets as spacers to clear the other chips, it works just fine. This also gives the heat a chance to escape.

(If you want, go to an external keyboard with the various adapters on the market; your ST is in good enough camouflage to smuggle into IBM's headquarters in a clone case! Incidentally, clone cases also allow easy, easy mounting of hard disks, easy to find power supplies (get a 65 watt IBM supply, and you're finished; don't overdo it, or the supply will not be loaded enough to work!), and so on. I currently use two IBM clone cases for my hard disk collection.)

The 1040 is trickier. There are MANY different 1040 motherboard layouts. There's even one with the 68000 directly under the keyboard! There's no way the SST will fit there. Whilethis is not a commitment, the logical choice would be a short flexible extender cable to get to the CPU socket, and to let the user install the SST in this manner.

Compatibility

Software compatibility? We expect, to be honest with you, the same compatibility that the TT machine has, which is about 80%. However, I must admit to a card or two up my sleeve. During development of Spectre, I learned some extremely sneaky tricks to fix Mac software that was breaking in truly weird ways, and it so happens that the main cause of software breaking with the TT closely resembled one of the Spectre bugs I fixed. I am right now working on a glitch fixer which I feel will make many programs run on the SST that could not run before; if it works out as well as I hope for, I may bundle

it with SST and make it available for the TT. (It's one of those things where the idea is perfectly obvious once someone thinks of it, and where it's also clear that it will be quite effective. I point to five years of making Mac programs work on non-Apple hardware.)

I really hope this fixer works on the TT as well. There are just too many ST-only programs that are not going to be updated for the TT that break, and if I can fix them with an AUTO folder program, I will. I personally feel that after the sheer effort of fixing some Mac software, I'll do it; the entire concept is clear in my mind, and I don't see problems. There will always be a few programs that break so hard they can't be fixed, but most break from one or two very small problems; the 68030 and 68000 are very compatible.

I do have one warning for you, which applies if you purchase any accelerator whatsoever. Many so-called "copy protection" techniques rely on the processor ticking over at a known rate, and break if that rate increases. Similarly, it might prove difficult for me to load my quirky-program-fixer if it's a self-booting game. (Hmmmmm. Perhaps I should put it into the operating system chips?) Anyway, careful on copy protection.

Installation

Installing the SST is pretty straightforward. You need to take the usual anti-static precautions (take off shoes, ground self, no rugs, write letter to Cybil Shepherd). Then, remove the 68000 from your computer, clipping the tops of the pins with sharp nippers. (Radio Shack nippers are great; if you grind the outside a tad, they fit any tight spot just perfectly!) Then heat up the soldering iron and remove the pins & solder with needle nose pliers and a desoldering tool.

Next, inspect the board for solder "threads" or shorts, or damaged traces. This is crucial. Use a magnifying lens.

Now, put in the supplied 68000 socket. We give you both a 64-pin socket and a spare 68000, in case you REALLY want to switch back to 68000 mode (or in case you want to sell the machine with out the SST). Solder it in. Again, check for the usual problems.

Plug in the amount of fastRAM you wish into the SST. This is a full 32-bit wide processor, so you need to upgrade 4 SIMMs at atime (each SIMM is 8 bits, you see). You can go with 0, 4, or 8 SIMMS. I would recommend at least 4; the whole point of this board is fastRAM. While you'll see performance gains without fastRAM, you'll see the kind of performance you want with fastRAM.

Finally, plug the board into the 68000, and hook up the power cable. Double check you're not a pin off in the socket, power up, and go.

The Cache?

No, we didn't put a cache on the SST. We thought long and hard about it. You see, we felt that having 4 or 8 megabytes of high speed memory was simply better than having a small 16,000 byte cache memory of essentially the same speed. (I do not understand all about cache vs. D-RAM timing, but George assures me that with Burst Mode, we outrun even a high speed cache with fastRAM).

However, there still IS a cache in the SST; you're getting the best of both worlds. INSIDE the 68030 chip, there are 256 byte caches for both data and instructions (512 bytes total). Hence, if you get into those small, tight loops, the SST will fly through them in typical cache behavior. When it "falls out" of the cache, though, the SST will shine; it'll burst-mode load data out of fastRAM at the RAM's top speed, instead of fighting with video in ST-RAM.

TT Compatibility?

To our complete surprise, long after the SST's specifications were laid out and George was working on it, we started learning about the TT. The TT and the SST share some VERY interesting characteristics! First, both use the 68030 processor. The TT uses a 32 Mhz processor, the SST a 33 Mhz processor (if you order that one; we also offer 16 Mhz and may offer 25 and 40). Realistically, 1 Mhz is not going to matter much either way.

The TT also uses fastRAM! It really made me feel good to see the fastRAM board inside the TT, when one finally showed up. And sure enough, there was a jumper to select Burst Mode! You see, the reason this made me feel good was that Atari's R&D department had researched the same problems we had and come up with the same conclusion.

The TT does not use a cache other than the 68030's onboard cache, which, judging by its performance, is plenty.

Once we really dug into the TT, we found some more stuff out. Now, I repeat, we had the SST board underway when the TT was around. But the address of the fastRAM was identical! We'd picked it more or less at random as a handy place to pick up an address select line. All this was starting to get a little bit eerie. This means that very likely, TT specific software will work on the SST, and the SST software will very likely work on the TT. Our preliminary tests give us great hope on this; a lot of things are working just fine, and the others we haven't done the underpinnings for yet, so we didn't expect them to do much.

The Test

So, finally, the Big Day came.

There is a very popular program called Speedometer for the Mac. This program measures performance of the machine and tells you; it's yet-another-benchmarker, albeit a very popular one.

Spectre version 3.1 (no, not 3.0; 3.1!) was loaded in. 3.1 contains some TT/SST-specific optimization: namely, it sets things up to

work out of fastRAM, not ST RAM. This is rather tricky and involves remapping memory with the aid of the 68030's MMU chip.

We ran Speedometer, and when it was all over, Speedometer told us in no uncertain terms that we were outperforming the Mac IIci. The Mac IIci is the #2 entry in the Mac performance sweepstakes. It's a 25 Mhz machine with all sorts of bells and whistles. The only thing faster, as I keep saying, is the 40 Mhz and very-expensive Mac IIfx. Before, we had only outperformed the Mac 128, 512, 512ke, Plus, and slightly outperformed the Mac SE.

At this point, it's tempting to dig into my cliche bag. "Windows seemed to snap open and shut crisply. Menus dropped down instantaneously. Documents reformatted and spell-checked." I'll tell you, it ran like a buzz-saw.

Admittedly, I have an advantage in Mac software; nearly all of it runs on the 68030, since the Mac II/68020 has been out so long that compatibility is a must, and that fixes the 030. But what I saw in ST mode was pretty impressive, too. I particularly like resizing windows with the "zoom" button; your eye doesn't see any flicker when doing so, which means it happened in one screen redraw--far, far faster than before.

There's some tuning to do; I see ways of making this thing even faster. As my competition reads Current Notes, I'll refrain from mentioning them. But the SST is at an equivalent point to putting a hot engine into a car; all that remains right now is to get the ignition timing set right, and it's ready to race.

Joppa Computer Products - See other page for shipping information

NEW ST Software

B.A.T.	$42
Codename: Iceman	34
Curse Asure Bonds	31
Disney Educational	
Goofys Express	30
Mickeys Zoo	30
Donalds Alphabet	30
Dragons Lair II	35
Exterminator	30
Final Command	30
GFA Assembler	59
GFA Basic and Assembler Bk/Dk	28
Grammar Grandslam	23
Hard Drivin' 2	30
High Energy	34
Horror Zombie Crypt	34
Judd Dredd	27
Mig-29 Fulcrum	50
NARC	34
Overlord	33
Sesame St. Letters	25
Sesame St. Numbers	25
Team Suzuki	30
Tom & the Ghost	30
Turbo ST v1.84	24
Vidi-Chrome	28

Atari ST Software

1st Word Plus 3.20	$58
3 in 1 Football	22
Atomix	25
Atomic Robokid	31
Back to Future Pt2	31
Basketball - Pro	22
Cyber Paint 2.0	40
Cyber Studio 2.0	45
DC Desktop 2.0	23
DC Utilities 2.0	23
Defender II	25
Deluxe Paint II	62
Diamond Back II	27
with Cache	33
Dragonflight	36
F-19 Stealth Fighter	40
F-29 Retalitor	31
Fighter Bomber	25
Mission Disk	21
FontVerter	30
G+plus 1.3	20
Gettysburg	36
GFA Basic 3.5e Pak	88
Developer Bk/Dk	25
G-Shell	36
GEM Utilitity	36
Mission Control	36
3.5E Upgrade Kit	24
Beckmeyer Products	
H/Disk Accelerator	23
H/Disk Sentry	29
H/Disk Toolkit	18
Harlekin	59
Heroes Quest	34
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STARTING BLOCK

by Richard Gunter

Digital Potpourri

Loose "Hot" Wires. The last two columns were a tutorial on CodeHead Software's *HotWire,* and I left a few loose wires, er, ends, that need to be tied up.

I mentioned that *HotWire* (Version 2.3) has a couple of glitches: one being lack of wild card support in the document file extenders associated with an application; the other, loss of some of the *HotWire* option settings when an application is run from the *MaxiFile* menu. From Charles Johnson's reaction to my query, it appears that both items will be changed. I didn't get the word in time to get that information into last month's column.

There are new releases of both *HotWire* and *MaxiFile* on the street, and a file on CompuServe (HOT30.TXT in Library 16 of the ATARIVEN forum) announcing what's new. Apparently, a lot...

Update Creep. It's no secret that I'm impressed with the CodeHeads' work, both as a user and as a professional programmer. They're constantly tinkering with their established products to improve them, and are very open to questions and suggestions from users. Their diligence in this regard does lead to a little confusion when one purchases the item from a dealer. I'm not sure whether the dealers obtain product direct or through a distributor, but the result is that the version you buy may not be the most current.

This phenomenon is not unique; it can happen with any product. How to deal with it is up to you; CodeHead's upgrade policy and price are reasonable in my opinion, but the upgrade will cost you a few bucks, and the CodeHead updates come more frequently than with any commercial product line I know. Some vendors charge rather a lot for their upgrades, so much so that I quickly start wondering whether to bother. Speaking of tutorials, there may be one in the offing on *MaxiFile*--when I get the urge.

Memory and TOS 1.4. This is the first column I've written since making a major change in my system: upgraded my Mega 2 to four MBytes of RAM, and installed TOS 1.4. The memory upgrade was an anniversary gift from my favorite Spouse, and TOS fell into the "while you've got the hood up, John" category.

I was a little nervous about changing TOS, even though the experiences of others have been good. I'm still feeling my way around, and haven't found any major problems. Haven't noticed a lot of differences either, but most of the improvements were internal and I've only been fooling with it for a couple of days anyway.

STDCAT 4.3 seems to work. Fortunately. I'd forgotten to print my floppy disk catalog before taking the computer to L&Y, and was worried I'd have to re-enter all that data. An earlier version of STDCAT worked fine with TOS 1.2, but Joe Waters discovered it didn't work with 1.4--whew! You got lucky, Richard.

QuickCIS works a little more smoothly, and *Publisher ST* is in hog heaven with all that memory. Publisher does seem less precise on mouse actions though. Double-clicking on an object doesn't seem to "take" on the first try much of the time, and the scroll bars have developed a habit of going too far. At this point, I suspect an interaction with TOS 1.4, and suppose I'll have to "strip ship" and experiment to figure it out.

Word Perfect seems perfectly happy with the new operating system, as do the rest of the productivity programs I've tried.

I've already eliminated several Super Boot function keys--don't expect to do quite as much rebooting to clear the machine.

My favorite freeware solitaire games work fine, but I haven't checked out the others. Come to think of it, there hasn't been much game playing around here lately.

Buyer's Lag. With the advent of new products from Atari the *Starting Block* is beginning to lag behind a bit, at least as regards the new hardware. This is a trend, folks. It will be the norm because of my personal buying habits. I tend to use one machine until I'm tired of it or have learned all I'm likely to from it or until it just doesn't do the new job I want it to do. My home computer is fundamentally for my own enjoyment.

Ok, it's a grown-up's toy, but the things have gotten into price ranges that mean serious money. Therefore, a new machine won't appear on my desk until I can talk myself into parting with the bucks for it. Takes awhile, friends.

I do want to keep an eye on that 68030 board Dave Small's doing and there's increasing pressure to get into PC emulation due to work, but a system replacement isn't in the cards until a couple of kids get through school.

My ST has the speed and capacity to do the things I want to do now, and that's sufficient. I'm reluctant to write in detail about anything that I haven't had the

opportunity to try out myself, and nobody's about to donate a TT or a Mega STe to the cause.

I'll continue to remind you what configuration I'm working with, and will attempt to alert you to anything that is strictly ST-specific. Most of the topics treated in these pages should transfer reasonably well to the newer platforms though.

Touching Up. While I had the checkbook out the other day, I also bought a copy of *Touch-Up.* Not the scanner; I don't have enough use for it. I'm still looking to upgrade EasyDraw, but that is one of those programs with a high update price. Looked like *Touch-Up* may do some of the things I've been looking for. It's not clear yet whether it'll be satisfactory as a drawing tool. We'll see, and let you know.

Spinning Spells. My spouse may be getting back into game playing--she found *Ultima II* and its successors a bit daunting, and *Dungeon Master* downright intimidating. *Loom,* however, may bring her back into the fold.

I've begun the game, and, so far, find it beautiful and different, a relaxing change from the frenetic activity of the DM duo. Its scenes are nicely drawn, background animation is attractive, controls are simple and intuitive, and the magic system is totally different. Spells are cast as sequences of musical tones, with animation of their effects. There are puzzles, but none very difficult. So far.

The disks are not copy-protected, and the game plays well from a hard drive. Since there's almost two MBytes of program and graphics, a hard drive is definitely the way to go. There are too many disk swaps with floppies.

By the way, have you noticed that some of the newer games are getting bigger? Multi-megabyte graphics and animations are becoming much more common these days. I'm told that one PC game has something like **nine** megabytes on multiple floppies. I sure hope these games can be installed on hard drives. It should boost sales of bigger hard drive units. Hmmm. Wonder if there's a connection.

Sniffing the Air. It's interesting that Atari's new chieftain seems to be personally talking to dealers. I don't know what they're talking about, but it seems a somewhat encouraging bit of news.

The move to sell Atari computers through chains (like Circuit City?) is probably a positive one. More visibility. With such distributors not being much into after-sale support and add-ons, this could mean more business for everybody. More visibility = more sales = more users = more demand for software and goodies. Perhaps even a few more members for user groups? Maybe? Hope? (We do clutch at those straws, don't we)?

Mail Order Integrity. I had a gratifying experience a few weeks ago. It seems a friend of my son's is a big fan of an arcade game that has recently made it to the ST. Flipping through a recent issue of Current Notes, he noticed an ad offering it for sale, and asked me to order it for him (my credit card, his money).

When I called their number and inquired about the game, the gentleman at the other end said they weren't selling the game at this time. It seems they'd had several copies returned due to defective disks, and a significant number of the replacements were also defective. They were holding off until the vendor got his act together.

I like that. Shows class.

In the meantime, there's yard work about to get started again, two adventure games I haven't touched in months, a copy of *Codekeys* that I haven't even opened, and a program Joe asked me to review long enough ago that it's getting embarrassing.

Not to mention that demo copy of the *Good Backup* utility and the much-interrupted attack on C and GEM programming and doing the taxes. Yecch. That should keep me busy and scribbling for a while.

The Junkyard Pussycat

by John Barnes

This month the Junkyard Pussycat is trying to catch up on a few odds and ends that were left dangling while he was off visiting the online services.

PS to CIS

Ron Luks, the chief sysop of the Atari forums on Compuserve, forwarded some information after the deadline for the Pussycat's March column.

Ron confirmed my feeling that CIS was the largest of the online services, with something like 650,000 members.

The apparent difference in tone of the service is, according to Ron, at least partly due to the fact that many CIS members use the service during office hours. The fact that CIS' rates do not change during the day may encourage this. These people are seeking serious information that will help them in their professional pursuits. The higher price of the service also tends to discourage casual users.

With its heavy support for MS-DOS, CIS has proven to be an attractive venue for online support of Atari's Portfolio. Atari has designated CIS as an official Portfolio support site, and there does seem to be quite a bit of traffic in this aspect of the Atari line.

Also, the Pussycat regrets his failure to point out that *QuickCIS* was developed by a lone individual with no financial support, so that comparisons with GEnie's *ST Aladdin* are somewhat unfair. Ron Luks points out that use of *QuickC* is has had a beneficial impact on usage of the system by Atarians. One hopes that Jim Ness will keep trying.

The Electronic Postman

After spending considerable time with online messaging on the various commercial services as well as on the Internet and Usenet over the last year, the Pussycat would like to share some impressions regarding electronic communication.

On the surface of it, electronic mail would seem to be a marvelous invention. Each party in a dialogue can respond at their convenience without the interruption of a ringing telephone. Correspondence can be carried out in a thoughtful, considered manner.

How well are these ideals actually realized? The effectiveness of electronic correspondence is diminished by the fact that some prominent recipients (Bob Brodie or Dave Small, for example) may get hundreds of messages in any given day. There is no way that they can digest all of this material, let alone respond to it. It is something of a miracle that these people correspond as well as they do.

With other, less serious, people there is altogether too much likelihood that a message will simply sink into the quicksand. If you need to get through to these people, use a FAX machine or the US mail. If you really need to talk to them track them down on the telephone as best you can.

A second factor limiting communication via modem is the small size of the screen. Most correspondents seem to run out of steam when the message scrolls off the screen. The time lost in scrolling back and forth causes some of the content to disappear from the mind as well as the page.

The person who replies to mail online is always conscious of the fact that the cash register is ticking away. Replies tend to be terse. The editing facilities that the services provide for online replies are usually leftovers from the days of teletype terminals.

Offline editing with a tool like *ST Aladdin* improves the situation somewhat by making it easy to create, edit, store, and transmit replies in a batch mode.

A third factor limiting the usefulness of electronic mail is the lag time, which interrupts the feedback that is essential to a real dialogue. It is difficult to focus one's mind on the subject of an exchange over a period of several days. A five-minute telephone call can resolve matters that might take weeks to iron out in an E-mail correspondence. The phone call may even be cheaper in the end.

The electronic information services would have us believe that their products are a substitute for paper mail, the telephone, or face to face interaction. They have been trying to convince us of this for more than 10 years now. As far as this Pussycat can see they have had precious little success. Their tools are too crude and they are likely to remain that way for a long time to come. There is really no way to match the bandwidth of the human eye, the human ear, and the nose as input devices. Computers have not yet done a good job of giving us the printed page, the painted scene, or the sound of music with any richness at all. As long as computers have to chop information up into little bits to process and transmit it, we will find that using them to communicate is a tedious business.

Where's the Beef?

In an online conference on Compuserve back in late January or early February Bill Rehbok, Atari's developer coordinator, wondered, with some asperity, where the applications were. He expressed some vexation over the fact that developers had bought lots of Atari's top-of-the-line hardware at very favorable

prices, but that they had failed to produce anything but utility programs. It is fair to say that Atari is getting tired of alternative desktops. Bill indicated that the days of this free ride were over and that Atari would henceforth be making sure that the hardware will be available when its dealers need it for sale to the public.

There are certainly two sides to this story, as the developers can ask, with equal justification, just whose job it is to build a user base. Long delays and false starts between announcements and delivery are certainly not the fault of third parties who write software.

Any beginning developer in the Atari marketplace faces a daunting task. The first question that must be answered is "what version(s) of TOS should I write for?" Far too many people have failed to follow the evolution of Atari's operating system. One still hears from people who have TOS 1.0 installed in 520 ST's. The Pussycat is not even sure what that entails, as it was long before his time. The community has done a poor job of making people realize how important it is to stay abreast of this matter, especially when it comes to serious software of the kind Bill Rehbok is asking for.

Operating system upgrades need to be made much more available (read "cheaper"). Perhaps disk-based patches to archaic ROM sets could be made available through user groups so that people could experience new features first hand. This might increase the demand for new TOS ROM sets. People laugh at Apple for the proliferation of versions for its Systems and Finders, but the net result is evolution toward a cleaner product in the end (besides, the upgrades are free).

The Importance of Standards

Another obstacle is an almost total absence of, or failure to adhere to, standards in areas like fonts and user interfaces. Each Atari developer is, it seems, forced to begin anew. Examples of this are well known to anyone who is interested in desktop publishing. A couple of applications use GDOS, which forces the user to drag along specialized font sets and output drivers for each application. Other applications (e.g. *Pagestream* and *Calamus*) use font sets totally of their own devising. Contrast this with the way things are handled in the Macintosh world, where the available fonts can be used with every sensible application. People may protest the price of Postscript technology, but the Pussycat suspects that it is cheaper in the long run.

Examples of bizarre user interfaces include *Tempus'* weird file selector, and the funky tool boxes in *Calamus* and *DynaCadd*. Keyboard equivalents are an area where people seem to feel totally free to express themselves. No one can reasonably claim that Atari applications have a uniform "look and feel."

Some applications, like *Publisher ST* and *LDW Power* fail to make use of the "Install Application" facility, thus losing much of the advantage of the point and click interface.

Some of the blame for this must fall on Atari because its basic tools, such as the item selector, are pretty shabby. Developers must also bear part of the blame because they fail to recognize what is important and what is not. The public must also bear part of the blame for a lack of discrimination with regard to quality software.

So, Bill Rehbok, if you want to know where the applications are, take a look around you. Look for examples of a lack of professionalism, provide effective development tools, supply feedback, and, above all, supply machines and operating system software that encourage developers to follow the rules instead of challenging them to find their own workarounds.

The New Generation

This discussion is timely because recent introductions may point the way to a better future. The "Font Scaling Metric" (or FSM) technique may lead to a better GDOS. The extensible Control Panel may prove to be a better way to integrate new functions into the operating system. The use of the VME bus may prove beneficial by allowing us to use hardware from other platforms for goodies like enhanced displays and image acquisition systems. Improved networking capabilities may make Ataris respectable inhabitants of offices and laboratories.

Unfortunately, these advances will be available only to those Atarians who move into the newer platforms like the Mega STe and the TT. This will mean lean times for many developers, as their market base will be very narrow until this hardware carves out a sizable chunk of the market for itself. Some products, mainly those at the high end, have been written well enough to survive the transition, while others will stagnate because it will be too difficult to maintain compatibility across the entire line.

The next few months will be trying times, indeed, as Atari pushes three seemingly separate product lines into the marketplace. The response to the low pricing on the STe line appears to be favorable. Existing users are enjoying some success in attracting friends and relatives to these machines on the basis of price and the existing software base, although there are lingering doubts, justified or not, about software compatibility.

The Mega STe line offers attractive new features, but it is not yet clear how much (or how soon) software and hardware will be available to take advantage of them. Whether these can compete with cheap Macs and IBM 386 clones remains an open question. Perhaps some of the existing power user base will find them attractive as replacements for tired Mega 2s and 4s if they can be assured that their expensive old software will work.

Where the TT line fits into all of this is a real

puzzler. Atari may have been really smart to offer the Mega STe for those existing users who simply could not justify the cost of increased speed and better screen resolutions. The developers of high end products like *Calamus* and *DynaCadd* can rework their products to take advantage of these features because their installed base is not that large to begin with and they have experience abroad. Rounding up new users in the workstation market will be a real challenge.

The Meaning of "Shareware"

There has been a lively discussion of the concept of "shareware" in one of the topics on GEnie's ST Roundtable. It seems the good old days that we enjoyed during the 8-bit years are gone forever. Some will recall that the PD disk offerings of those days included a lot of source code with tutorial value for the beginning user. The programmers truly did share their product with the public.

Nowadays shareware seems to represent a form of payware that is distributed through channels other than those used for standard retailing of packaged products. A developer sees that 30 people have downloaded his product from an online service, he figures that those 30 people have sold 30 copies of the disk at their local user group meetings or that one of the Public domain software services has sold hundreds of copies as part of their disk of the month. After a while the developer begins to wonder why he is not seeing an influx of checks.

First of all, it is likely that the majority of the downloaders take one look at the program and file it away. It may replace something that they have bought or for which they have already paid a shareware fee to someone else. Secondly, sales of public domain disks by user groups, magazines, or PD retailers are not a high volume item. Besides, many of the purchasers do the same thing the downloaders do, they look at a program and file it away. Precious little of the stuff bought in this fashion ever finds its way into the permanent repertory of potential users.

Secondly, look at the matter of pricing. Typical shareware fees run in the $10 to $15 range, while some of the more ambitious ones go up to $40 or $50. For those prices one can buy plenty of utility programs with printed documentation and a modicum of technical support.

The Pussycat's bottom line for shareware authors is: "If you believe in your product, bite the bullet. Package it, write good docs, and market it." If it is not worth that amount of trouble, share it with the public or sell it to someone else, but don't ask for money.

To those shareware authors who have packaged their wares with their own commercial products, I say "forget it." The user who has ponied up for a commercial product will not be easily shamed into passing along another wad of cash. Treat those programs as *bona fide* components of your commercial product and think of them as added incentives to buy.

The ST and the "Real World" - a Request for Information

Atari's 68000 based computers are just as inconspicuous in the laboratory as they are in the general marketplace. The Junkyard Pussycat would like to hear from people in the USA and abroad who have used Atari computers in physical science labs or in home applications that do things like read voltages, sense switch closures, actuate relays, etc.

I know that there are, or have been, some arcane products out there. A/D converters that run through the cartridge port and an IEEE 488 interface, to mention only two. Other alternatives for interfacing include SCSI, RS-232, Centronics parallel, and MIDI. Don't hide your electronic light under a bushel.

Please send comments to any of the following addresses:

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The Not-So-Dumb Way to Do Laser Printing

Plus a Goofy Analogy Just for You

Again, I find myself writing this column a couple of days after it's due. It's not that I don't like to write, it's just that when you write, you want to feel divine inspiration, as if it were the only way you could keep thousands from certain death, and I've been finding that the required inspiration seems to come much easier *after* my deadline. (Yes, Joe, I know, I are a naughty toad.) Not only can I use that as an excuse for lateness, but my minor delay also brought us some tidbit quality hands-on reporting on the TT030! But let us tackle one sordid topic at a time.

Atari's Laser Printers

I've been asked about, had misconceptions propositioned as fact about, read dumb articles about, and told the true story about the Atari SLM804 laser printers for quite a while. Now that Atari has introduced the quite similar SLM605 printer, a whole new round of misconceptions, questions, and dumb articles are appearing, and I'd like to take a second to say, "Hey wait a minute, this is dog food," and clear up some crazy notions folks have absorbed. (That special quote, one I've found quite handy, comes from the Honeymooners, in a classic moment when Jackie Gleason, unawarie, feeds dog food to his boss, touting it as a new miracle appetizer.)

First, let's talk about laser printers and the way they work, going from the image on the page backwards. Then we'll see why the Atari is different. You may see, on a page of graphics and text, what looks like text and pictures, but if you look closely, you'll see that everything on the page is made up from dots. (You're thinking, "Oh geez, not another stupid story about dots. Everything's dots. We're all just specs of dust. Just get me depressed." It won't be like that. Just read on--have a little faith.)

Those dots had to come from somewhere. Somewhere, some decision-making piece of hardware had to say to the nearly eight million dots on your page, "Ok, you, yes you, the dot in the corner with the great smile, we want you to wear something black, and you, Rodney? Is that it? You wear white. The contrast will be **wonderful**. That looks great. I love it--I just *love* it!" Eight million little perfectly choreographed dots come out on to the page, giving you the text and graphics you want. The question now becomes, "Gee, how can that choreographer possibly **remember** who's supposed to wear white and who's supposed to wear black? That must take a lot of *memory!*" And the other question that organically flows from that is, "And who is that choreographer? Is he American or Japanese or what?"

The number of dots we're talking about is 7,776,000, on a 8.5" x 11" page--more on a legal sized piece. Dots translate directly into bits (1 for white, 0 for black on the Atari laser), from there we can divide a few times and we see that 7,776,000 dots is about 949K, almost a megabyte. That's only for the choreographer's plain memory of the page--that doesn't leave any

The New Atari SLM605 laser printer prints 6 pages per minute, provides 300x300 dpi resolution and is priced below $1,300.

room for a sketchpad, any abstract thoughts, or idle dreaming. So we know that no matter who the choreographer is, or where he is, he's gonna need a megabyte or so to think.

Atari, when trying to decide how to design their laser printer, realized that in the Mega ST computers there were a couple of megs of usable memory, plus a nice 68000 processor that could easily moonlight as a choreographer. The Mega ST could be as good a choreographer as anyone.

Other companies had traditionally said, "Yeah, well." They put a whole separate processor in the laser printer, as well as a separate set of RAM. This is a fairly significant duplication of effort--also known as WASTE. (Especially true when RAM was outrageously expensive.) The main advantage to doing this is that the computer is free while the printer prints. The biggest disadvantage is price. Once you buy all the RAM, fonts, not to mention the possibly-pricy printer itself, you've spent a lot of money.

So, that's where we see the difference. The Atari SLM804 and new SLM605 are dumb--but not so dumb. (You don't see *them* singing "If I only had a brain!") Printers like the HP Laserjet are smart, but that just means they have yearnings and desires that you must fulfill for them, lest they decide they'd rather not function. The first thing any dictator will tell you is that if you want to keep someone working hard and happy, make sure they stay **dumb**.

What does all this mean for you? It means that in order to use the SLM804 or SLM605, you need about two megabytes of RAM, plus some sort of software to create a page on the ST, store it in its RAM (remember, it will eat up almost one megabyte,) and then throw it out at high speed through the computer's DMA port. Now I'll take some prefabricated, frequently asked questions from our reader audience.

Atari's SLM804 laser printer prints 8 pages/minute, 300 x 300 dpi resolution, 250 sheet paper tray, toner cartridge life is 3,000 pages, drum life 10,000 pages.

How does it print plain text, if it's so dumb?

The SLM printers rely on the choreographic skills of a memory-resident program in the ST, like Atari's Diablo emulator or the public domain "LaserBrain." Atari's Diablo emulator loads in when you boot your machine and then waits until it sees a print command. At that time, it jumps up and says, "Hey--it's for me." It then goes and thinks about what is to be printed, choreographing dots into the shapes of letters from fonts that have been loaded into memory beforehand. It will even accept special requests for graphics, choreographing the dots accordingly. The page assembled in memory, it's squirted out to the printer at high speed and then printed.

Atari's program pretends that one is printing to a Xerox Diablo 630 Daisy Wheel printer. A strange choice you mutter? Yes. Another program, LaserBrain, chooses a more conventional printer to follow blindly--the ever popular Epson nine pin standard. This is nice for programs like PrintMaster and others that will output only to a nine pin dot matrix printer. Anyway, if you click on a document from the desktop and select "print," that's how it makes it to paper.

Why is that different from an HP Laserjet?

This is where my illustration comes into play. If you send a bunch of text out to the Laserjet, no program will intercept it.It will go quite simply, puttering the while, out the parallel printer port to the Laserjet. The Laserjet will then say, "Oh geez, stuff to print? I've been so relaxed! I hope that fool has given me enough memory -- 'cause if he didn't, ain't **no** way he's gonna see that thing on paper anytime soon!" It uses its processor, figures out what dots belong where, stores it in its own RAM, then prints it from there. While taking less of the computer's time, how often are you going to continue editing something until **after** you see the output you've got so far? You're going to want to wait for the printer **anyway** most likely.

How much time does it take for the SLM printers to print a page compared to a "smart" printer?

On the average, the SLM printers will do a screen dump in about twelve seconds. That's the amount of time it takes from the initiation of the dump to the return of control to the computer. The SLM printers will print a medium-complicated page from a program

like *Calamus* or *Ultrascript* in about thirty seconds. A relatively simple page from *Calamus* can oft be had in under 15 seconds. A complex page from *PageStream*, printing directly to the SLM printer in its Diablo emulation mode, will often take 15 minutes or so. *Calamus* is typically the fastest of the DTP programs with the SLM printers.

"Smart" printers take about the same amount of time. And the secret is this: A half megabyte of print information will take up about a meg of memory for the page description (all eight million choreographed dots), **plus** the half meg of printing **instructions**. That means that if your printer doesn't have two megabytes, it will take as **long** or longer (allowing for the amount of time required for a half meg of instructions to go through a fairly slow port) for a "smart" printer to print a page as an SLM printer would. Trust me kids, the cash does add up. And remember, there aren't too many circumstances when you'd continue without checking your output anyway. You'd be paying several hundred dollars for a 5% productivity increase. The bottom line is that it doesn't make a whole lot of difference which printer you have. So why pay more for a smart printer?

What is PostScript, do I need it, is the SLM804 or 605 PostScript, and what the heck is Ultrascript?

PostScript is a page description language invented by Adobe Systems. It works kind of like reverse polish notation. You describe the shapes of the objects you have, and then you tell it where you want it, how big you want it, what angle you want it at, etc. It's quite handy. Graphics described in PostScript come out looking quite sharp. PostScript fonts are standard, so you are assured of good quality no matter what type of output device you're using. There are a lot of advantages to PostScript, but that is a subject of another article, not to mention I have only a cursory knowledge of it. A real guru like that guy in Computer Shopper could give you a better sales pitch for it.

While you may not exactly *need* PostScript, I have it, and I'd never give it up. *Calamus* will let you do all kinds of good looking stuff, all without PostScript! I just enjoy PostScript myself because I have all kinds of fonts which look much better than anything I could do with native fonts from *PageStream* or *Calamus*. But I don't have PostScript, really; I have the mysterious *UltraScript*.

Before I get to a description of *UltraScript*, let me address the question of the SLM804 or SLM605 "being PostScript." PostScript is a feature of smart printers **only**. The PostScript language software is typically stored onto a chip or a card, and is accessed by the choreographing processor of the smart printer. So the answer is, the SLM804 and 605 "aren't PostScript." But that doesn't mean that the ST couldn't interpret a PostScript file and then send the page to the SLM804 or 605. That's where *UltraScript* comes in. And *UltraScript*, along with a mildly deceptive advertising campaign by Atari, is the reason why many folks think that the SLM804 and 605 "are PostScript." Atari had a desktop publishing system ad campaign a couple of years ago, claiming to have a "PostScript version of the SLM804." All they were doing was including a copy of *UltraScript*.

You may have guessed that *UltraScript* is a PostScript interpreter for the ST. You were right. It will read a PostScript file from disk, which is just a list of commands, and create the page accordingly. It keeps all of the PostScript fonts on the hard disk, rather than in ROM chips as is done in a smart PostScript printer. It does take up (let me check) about five megabytes, but that's for about 15 fonts in four styles each (normal, bold, italic, bold-italic.) That's pretty good. *UltraScript* is quite fast, works usually in the amount of time needed for a PostScript printer anyway, and is cheap. *UltraScript*, with about eight font families, costs about $220. That's a lot better than $2,000 for a PostScript card for an already expensive "smart" printer.

What is the difference between the SLM804 and SLM605?

The SLM804 was brought out almost four years ago, and is based on the OASYS LaserPro 5308 printer (look for OASYS toner part #JRP00-00404.) While this unit is reliable, has decent print quality, and is pretty cheap and fast, there are some disadvantages. People discovered that their computers won't work properly without the power being on. People discovered, via their electric bills, that it consumed a lot of power when it was on. Plus, toner is hard to find and cartridges can't be refilled. And, oh yeah, the print quality, while quite good, could always be better?!

So, the SLM605 was born last year. It is based on the TEC engine that is used in the Epson EPL-6000. You will recall that last summer I brought you some of the initial reports on this printer, saying it will have better print quality, be smaller, and cheaper. Well, those predictions are true. It is smaller--most notably in height (only 8" as opposed to 11"), but it takes up a little more desk space. It has a paper tray that sticks out the right side, which is a little annoying to me. But the printer makes me **feel** better psychologically, and isn't that what counts in the end? The print quality is better. Blacks are blacker, greys are greyer--no more "crazy greys" from your laser. Single dots are defined better. Thin places in letters and graphics won't be left to the imagination now. It makes less noise when on and consumes less power, but it is necessary for it to be on while operating the computer. It uses exactly the same soft-

ware and hardware interface as the SLM804, and is completely compatible with it in every way.The 605 is slower than the 804: six pages per minute down from eight. But the initial time needed to print is still the same, and I've noticed no difference! Toner will be easier to find now. Just look for the Epson EPL-6000 toner. And you can probably refill cartridges now, too. That's all on laser printers; I'm running low on space! Check out the SLM605 though--it is nice! Some places (like me) have SLM804's cheap, too!

1CM135 vs. SC1435 vs. Me vs. Atari

In February, I wrote a nice little piece about the Magnavox 1CM135 monitor and how it's the same as the Atari SC1435, except the 1435 had fewer features and costs more. Well, several phone calls later, I know the monitors have essentially the same features, and the SC1435 may soon cost less because of my observational article.

First, Bob Brodie called me and seemed surprised that they were the same. Ok, that's reasonable. He was checking into it. Last week I get a call from Tim Curtin, the guy in charge of OEM (Original Equipment Manufacturer) stuff at Atari. He said that the two monitors had identical features, but it just wasn't mentioned in the first 5,000 copies of the user's manual. And the SC1435 gets all of its inputs through the single connector on the back--it doesn't need the other ports to work, (but you do need a special cable.) Ok, that's reasonable. Both Bob and Tim wanted to know how much I was paying for the Magnavox, and they're looking into lowering the price on the SC1435 to match it or beat it. The only feature I see the SC1435 lacking that the Magnavox has is separate chroma and luma inputs for use with Super VHS. But maybe not. They said they may change it to **do everything** the 1CM135 does, and make it cheaper. Tim had me write up a little fax for him, describing pros and cons of the 1CM135 and SC1435 so that he could take it into a meeting with Sam T. He also wanted to know who made the cable for the Magnavox, as if pinouts were proprietary! But anyway, maybe that will lead to happier days for dealers and end-users in regards to monitors.

General Speed Comparisons for Atari Computers

1040STF	TOS 1.4	No Blitter:	100.0% (Base Case)
1040STF	TOS 1.4	Blitter	107.3%
1040STE	TOS 1.6	Blitter	98.4% (Why Slower?)
1040STF	TOS 1.2	Blitter	106.6%
Mega 4	TOS 1.4	Fast T-16, No Blitter	154.0%
Mega 4	TOS 1.4	Fast T-16, Blitter	161.5%
TT030	TT TOS	32MHz	176.5%

TT Report

I'm a registered Atari developer who's paid in cash for a TT030 8/80--the 8MB RAM, 80MB hard disk machine. So naturally, I can't have it. As far as I know, the only TT in the state of Maryland is at Maryland Monogram, a shop that does custom monograms for all sorts of folks, including the president. Fortunately, the TT lives across the street from me. And the guy who owns the machine is a nice guy.

He let me come over and look at it last night, and I ran some software on it. It seems very nice. Spectre seems fast and nice on it. Nothing crazy happened. Things just worked. I just brought over my hard disk and just used it. I was amazed. I did some speed tests on it, and on some machines I had laying around here. Averaging several different test times together, I came up with the general speed comparisons shown in the table.

These percentages were computed with the help of the Quick Index program. I decided that a 1040STF with TOS 1.4 was the base case, and then averaged the difference in speed between all these other machines, and assigned them percentages in relation to the 1040STF. Speedometer ran under Spectre, marking the TT as being as fast as the Macintosh IIci. Fast, fast, fast!

I don't have a lot else to say about the TT other than that. It seems really nice, but mostly it just seemed like a kind of fast ST. Cool. I can't wait for Unix! Hear that, Atari?! Why he can have one and I can't, I don't know. I'd like one. He bought it from a guy in Texas with a company called Data-Stitch. He has software for the TT which will figure out stitch patterns, in color, onscreen, and then save to a disk compatible with an automatic stitching machine. Cool, admittedly, but why does he get one first!)-:

Bye

Joe's probably going to kill me. My article is swelling far beyond its usual limits this time, plus it's three days late. I'd best call him and offer to upload it to him. I'll catch you all later, and if you have any questions you want answered about anything, let me know. Next month we're going to do several! Be kind to animals!

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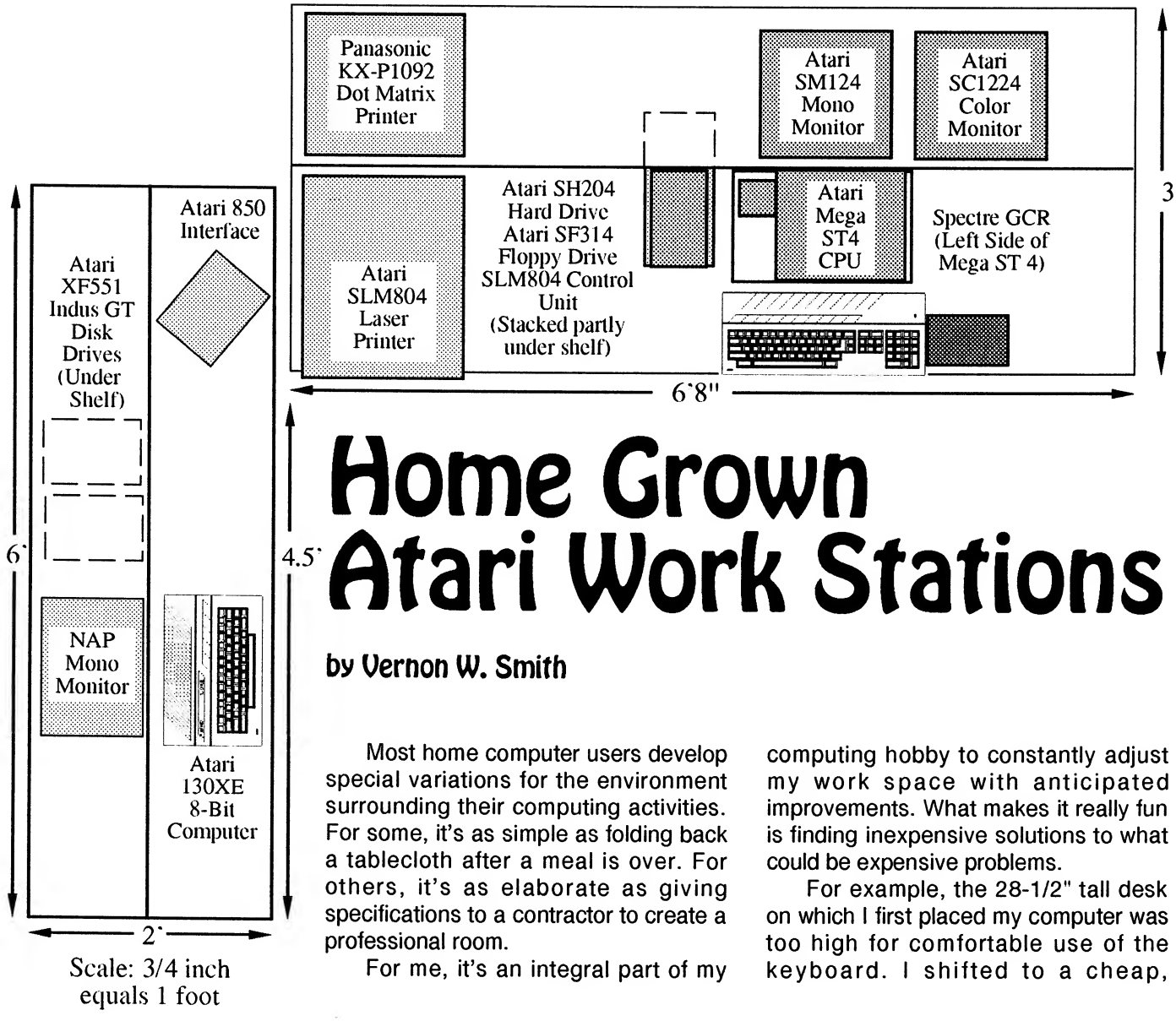


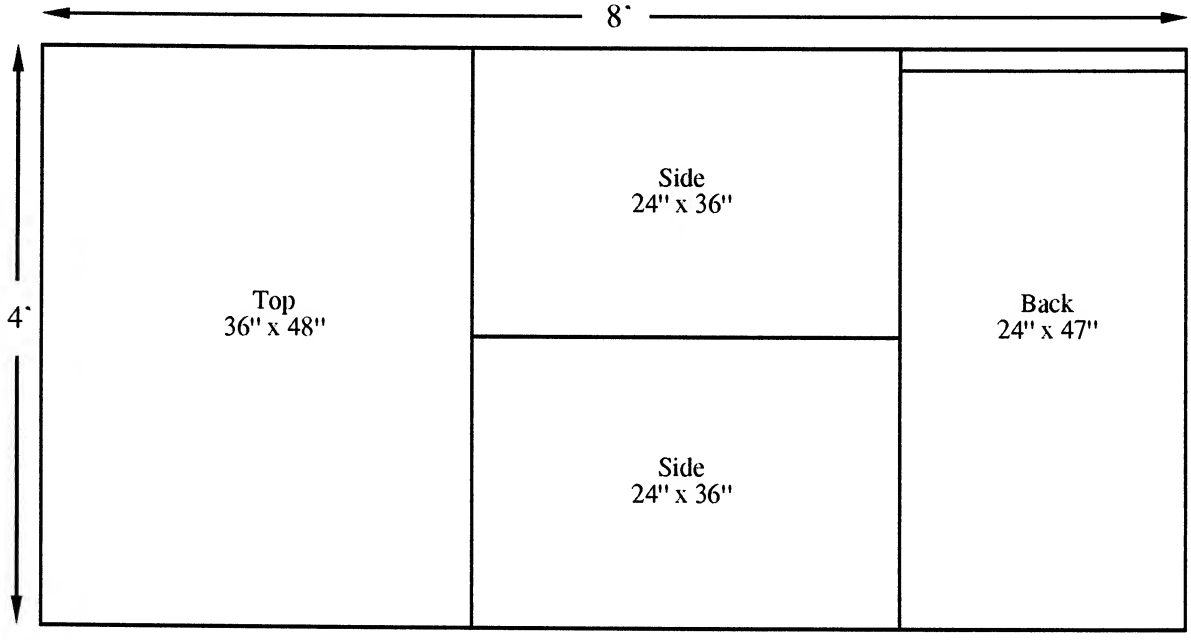
Home Grown Atari Work Stations

by Vernon W. Smith

Most home computer users develop special variations for the environment surrounding their computing activities. For some, it's as simple as folding back a tablecloth after a meal is over. For others, it's as elaborate as giving specifications to a contractor to create a professional room.

For me, it's an integral part of my computing hobby to constantly adjust my work space with anticipated improvements. What makes it really fun is finding inexpensive solutions to what could be expensive problems.

For example, the 28-1/2" tall desk on which I first placed my computer was too high for comfortable use of the keyboard. I shifted to a cheap,



26-1/2"-high typing table but it still was awkward with feet that cramped my legs and a surface still too high for my upward angling arms.

Low-Cost Construction

From a sheet of 4' x 8', 1/2" plywood, I cut out four sections which I screwed together to make a table 24-1/2" high, 36" deep, and 48" wide. The top was 36" x 48". The sides each were 24" x 36". The back (which braced the whole enough to make it stable) was 24" x 47". I had room enough for my 800XL computer, an Indus GT disk drive, a Sony Color 12" TV, joysticks, books, and papers.

The cost of a 4' x 8' section of 1/2" plywood is $14.99.

Speaking of cheap solutions,when my wife Martha wanted to set up a computer play area for our grandson, Jayse, she used two sturdy, folding TV-dinner trays.

These particular trays have flat tops, 15" x 23", with a thickness of 5/8". The height on the folding metal legs is 24-1/2", just right for short adults or a four-year-old grandson on a thick phone book. Martha put the trays one behind the other in a corner of the room so that the tray with the monitor was braced diagonally to avoid being tipped over. The cost of these particular trays a year ago was about $15 each as part of a four-tray set at a discount store.

Recently we saw a four-piece O'Sullivan computer work station with counter, shelf unit, corner-piece, and a printer table for $88. If we had to choose between the commercial work station and the TV tray set as new purchases for a permanent computer setup, we'd certainly go for the dedicated unit, but the TV tables work fine, can be stored easily when extra space is needed, and were already available for no extra expenditure.

While the above solutions were for our 8-Bit equipment, most of my work station equivalents have been devoted to an L-Shaped ST/8-Bit combination area involving three monitors, two computers, three floppy drives, a hard drive, a Panasonic KX-P1092 Dot Matrix Printer, and an Atari SLM804 Laser Printer.

Naturally, this takes quite a bit of space along two walls, but it has a benefit in being arranged so that both the 8-Bit and the ST can be hooked up to the same dot matrix printer without moving the printer itself.

Doors Make Good Tables

For the table surfaces of my L-shaped work area, I use two flat, hollow-core, flush-edged doors, 1-1/4" thick. One is 3' wide by 6'8" long and the other is 2' wide by 6' long. They give me a table surface area of more than 32 square feet. They're the cheapest I could find at my local lumber yard. Today's cost is $18.97 and $12.50, respectively.

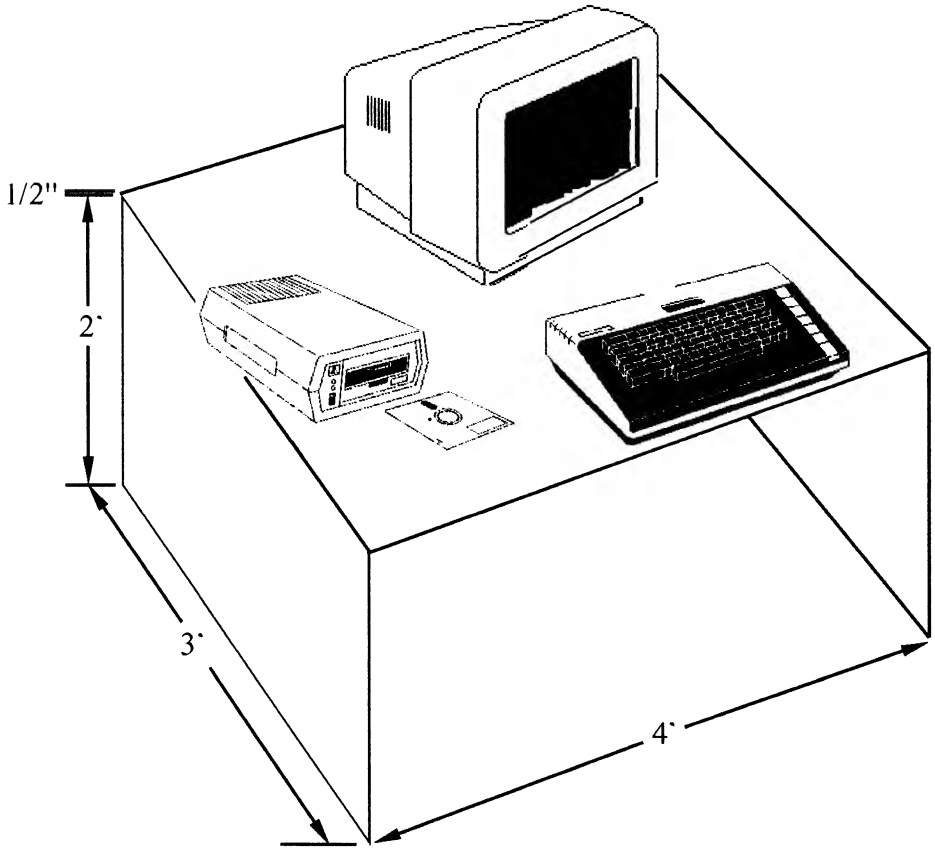
I put a natural stain finish on them to protect them from spills. (However, I never let food or drink come anywhere near my computing room so they could have remained unfinished and still be usable.)

They sit, unattached except through the force of gravity, on top of some home-built shelf units originally built by my father a long time ago for his book collection.

The supporting units are 2' high, 2' wide, and 13" deep. He nailed together eight 3/4" inch boards, each 6" wide by 2' long; four 1-1/4" square cleats each 13" long, and a diagonal 3/4" board, 3" wide by 35" long, across the back for bracing. The shelves provide lots of room for storage as well as the support for the flush-door table tops.

The lumber cost for one of these today is less than $10. I use four of them.

Since I don't worry about looks, these are fully exposed, but if I needed to cover them up, I'd consider tacking inexpensive cloth to the front and sides. My wife has come to accept my make-do



solutions ever since I tacked wide sections of burlap to a ceiling to reduce spurious hi-fi reflections in a noisy apartment years ago.

Much of the furniture I've built myself over the years has received the flat-black paint treatment. Most of the shelves where I store my disks are this color. I keep the disks in Media Mate holders on 12" deep shelves with 12" between shelves to allow the disk caddies to be opened up all the way without bumping the shelf above. When I run out of Media Mates, I use the original boxes in which the disks came for overflow, assigning to them the disks I use the least. Drawer-type storage would use the space better but the commercial units I've seen cost more than I want to spend.

Distancing The Monitor

Recently I've been reading about the possible danger of being exposed to low-level radiation from monitors when seated too close to them. This poses a real hassle for me because I wear trifocals and if I place the monitor more than 2' away (which the January 1991 *Computer Shopper* says is recommended for minimal danger), I have trouble reading the screen. I feel less eyestrain when the screen is about the same distance as my keyboard, which is about 18 inches.

My first solution was to put my ST monitors (Atari SM124 Mono and Atari SC1224 Color) on a shelf behind the computer.

The shelf is a piece of 3/4" plywood, 16" wide by 6'8" long, which sits on top of the table on three cardboard boxes, each 8" high by 10" wide and 12" deep.

Cardboard boxes are cheap and effective for spacing and supporting shelves. They're strong and readily available. Using them to support shelves is a great way to store boxes which may be needed some day to return a defective product. A variety of sizes are free from the local grocery store.

(I have the bulk of my large LP record collection stored at counter-top height on boards, using boxes in which I purchased hi-fi and computer equipment for the upright supports and grocery boxes to hold the records.)

The shelf at the back of my ST computer puts the monitors between 2-1/2' and 3' away, which may help the radiation question but does terrible things to my eyesight. I really like to have the monitor just behind my keyboard for closeup use. When I do that, though, another problem arises. There seems to be interference with the built-in drive on my Mega ST4 CPU.

(Various Atari resource people, like Dave Small, have written about the interference which can occur between the drive and the monitor when one is too close to the other. *Current Notes* in December 1989 had an article on shielding the Mega ST4 internal drive with aluminum foil. I followed the instructions but still have had trouble from time to time, which may have been due to the proximity of the monitor to the drive.)

My latest solution adds a cookie pan. That's right. I borrowed a flat, metal cookie pan from my wife. It measures 12" wide by 18" deep, which is just wide enough to take the base of either the color or the mono monitor.

The distance from the back of the shelf to the back of my computer keyboard is 27". By using a couple of 1-3/4" blocks on top of the CPU, I can slide the tray forward and backward, across the shelf and the CPU, effectively varying the screen from a distance of a few inches to a few feet away.

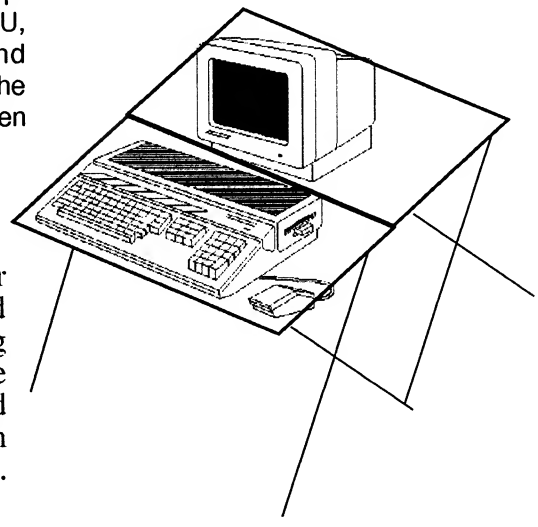
I haven't been able to make any scientific tests to see if the drive interference is lessened, but I haven't had any problems since I started using the tray. I vary the distance depending on how much I want to see and how much I'm worried about radiation, changing it easily during a work session.

Up Lighting Is Better Than Down

Lighting required special attention. Although my windows are covered with drapes, a central ceiling light fixture reflected in the screens. My solution was to turn off the overhead light and buy the least expensive type of architect's clamp-on desk lamp ($9.97 from a discount store.)

At first I used one, then two, now three of these, at spaced distances along the work surface, shining down and adjustable to wherever I wanted concentrated light.

Then I read a Cornell University report that light directed up to the ceiling and walls was less traumatic than light directed down from the fixture. That study was done with florescent lighting but I found the principle seemed to work well with my architect's incandescent lights, too. Since my walls are greyish-white, they diffuse and



TV tray tables don't offer much space for a mouse and an ST, but if room for living is a problem, they can be quickly packed away and quickly set up for short-term or emergency use.

reflect the up-directed light very nicely. The concentrated glare is gone and there are no hot spots to reflect in the screens. When I need concentrated light, I can swivel the lamps down.

Elevating the CPU

The Mega ST4 CPU has the 3-1/2" disk drive opening at the front right. This means it has to be mounted high enough above the keyboard to allow for inserting and removing the disks. In the pictures of the Mega 4 Desktop Publishing System they always show a MegaFile Hard Drive under the monitor to achieve the same purpose. My Atari SH204 Hard Drive is the "shoebox" shape so it won't support the monitor by itself.

I use my Mega keyboard up on its tipping legs, so the clearance has to be a minimum of two inches. I put three short 2" x 4" blocks on edge to raise a 1/2" plywood platform above the keyboard level.

The platform under my Mega ST4 has to be wider than the CPU because I keep a Spectre GCR Macintosh emulator cartridge plugged into the cartridge slot at the left . It takes a little more than 3-1/2" and I don't feel comfortable unless it's firmly supported on its own foundation at the same level as the CPU. The 1/2" plywood platform for the CPU and the cartridge measures 18" wide by 15" deep. The CPU is 13-1/2" wide by 13-1/2" deep.

When I first set up my work area, I was using the Panasonic KX-P1092 Printer only. I placed it at the forming of the L where the two door-tops meet and brought to it cables from each of my systems.

To the left, I have an Atari 130XE Computer, with an NAP 12" mono monitor on a shelf (on cardboard boxes, again) behind and above it.

Between the computer and the printer are an Atari XF551 Disk Drive, an Indus GT Disk Drive and an Atari 850 Interface. The interface provides one output to the dot matrix printer and another output to the RS232 input of the Mega ST4. I can copy from one system to the other using a null-modem cable.

The ST parallel output goes to the dot matrix printer, too. Although I simply hook up the proper cable, leaving the other disconnected, it would be possible to purchase a switch that would do the job easier. My urge to do it as cheaply as possible has kept me from buying a switch to date.

The same concept holds true for my color and mono monitors with the ST. Although there are excellent switches to let both monitors be connected at the same time, I use the mono computer so much of the time that it is not worth the cost to change from plugging and unplugging the cables the few times I need to.

Since getting the Atari SLM804 Laser Printer, I seldom use a dot matrix with the Mega ST4, but occasionally I run into projects where the final quality is not worth the higher cost of using the laser printer.

For example, I am cataloging my music collection and I make up hundreds of forms for entering the data with a pen right at the record boxes. Later, I bring the data sheets to the computer to enter into *SuperBase Personal 2.*

I tried bringing the LP records, cassette tapes, reel-to-reel tapes, and compact disks to the computer directly, but that makes an awkward mess because there is so little area around the computer to place objects of that type.

I turn out the forms using the 9-pin dot matrix printer which, while noisier and slower, is quite adequate in quality for my data forms. It's handy to be able to keep the dot matrix printer on the shelf above my work counter and to keep the laser printer on the counter itself between the two computing systems.

To the right of the laser printer, I have the Atari SH204 Hard Drive, the SLM804 control unit (on top of the hard drive), and an Atari SF314 double-sided external floppy drive (on top of the SLM804 control unit.) The monitors are to the right of the drives on the behind-the-CPU shelf and the CPU and the keyboard are to the right of the drives on the flush-door counter top.

Goodbye Carpal Tunnel Pain

One of the first Rube Goldberg additions I made to my ST setup was to ward off carpal tunnel syndrome. That's the pinching of nerves in the wrists which can come with too much keyboard activity. What I found was that I was leaning the heels of my hands on the space bar a lot. If I pushed the keyboard in to where my hands rested on the surface of the table, my wrists were constantly bouncing against the sharp edge of the table.

I cut a 12" long piece of 1" diameter dowel and used gray electrician's tape to attach it to the counter just in front of the keyboard. Now I rest my hands on the dowel, which is round and smooth, and I haven't had nearly as much grief from my wrists.

From time to time, I browse through the computer furniture departments in nearby stores looking for new arrangement ideas for my components. I've seen some very ingenious designs but almost every configuration has elements which don't quite fit my special needs and which cost more than I want to spend.

I urge anyone who can't afford to commission a carpenter to custom design a work station to consider the inexpensive resources available from a cellar, an attic, a closet, or the neighborhood lumber yard. It pays off in comfort and cost.

Even if you plan to buy good looking furniture, it will help to try some of the above substitutes to learn how you will actually interact with the equipment before you make the big investment.

CN SPECIAL

Boston's Computer Museum

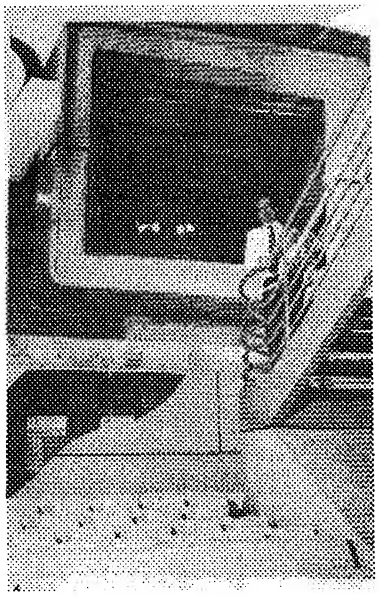
A Visit with the Past, a Lot of the Present, and Some of the Future

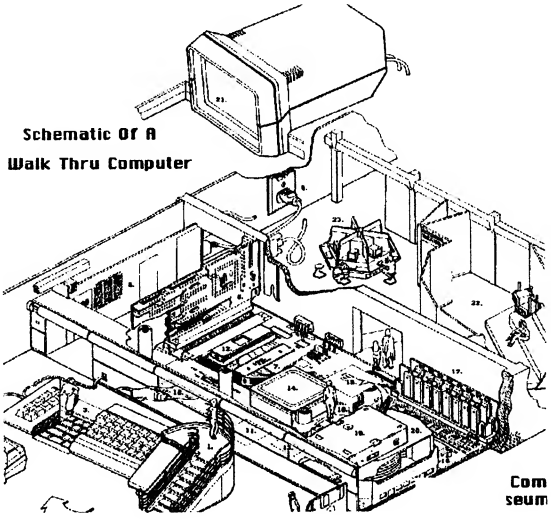
By Bob Underwood

Two of America's greatest accomplishments, the forging of a free democratic nation and historic leadership in developing advanced technology, have strong roots in Boston. Monuments and museums to both offer the visitor interesting, and educational, activities.

Of particular interest to CN readers is "The Computer Museum," located on Museum Wharf in Boston, next to "The Children's Museum" and overlooking the site of the Boston Tea Party. Open since 1984, the museum, a non-profit organization entirely devoted to computers and computing, provides the visitor a unique, hands-on experience. During a July visit last year to Boston and New England, we stopped by the museum and found it to be a dynamic series of professionally designed and executed exhibits (with some artifacts on loan from the Smithsonian). Don't visit Boston just to see The Computer Museum, but if you're in the area (e.g., touring historical landmarks), spend a few hours at this often fascinating repository dedicated to those things which interest us (computers)!

The centerpiece of the museum is the "Walk-Through Computer" (WTC), a recently opened giant model of a PC. Ever wondered what really makes a PC tick? Well, now you can run a program, "World Traveler," using a huge functioning keyboard and trackball (size of an Army jeep), observe output on a giant monitor, and then take a walking tour inside the "case" (through the motherboard, turning left at the video board, right at the CPU, etc.) and wander around in this superb and unique exhibit; the "working parts" are 50 times oversize. You can observe and trace the interaction of the various parts of the PC, with internal functions and processes demonstrated using video and other techniques. The WTC seems to have the "look/feel" attributes of both IBM and Macintosh, which is not surprising as some of the major sponsors of this million dollar plus exhibit are Apple Computer and Intel (the WTC is running a '486 microprocessor). Accompanying literature explains a hidden MAC II and DEC Microvac run the WTC's program and simulate the giant model's data flow. Regardless, the WTC is a remarkable and detailed exhibit (it even contains a giant power plug in a giant wall outlet)!





Schematic Of A Walk Thru Computer

Com seum

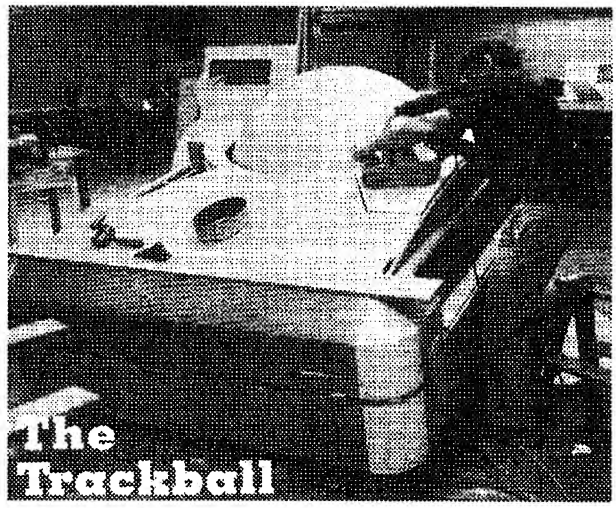
Major New Exhibits

The museum promises WTC is the first of four major new exhibits; others on the way are "Milestones of a Revolution," "The Computer Discovery Center," and "The Networked Society." This is an active place with plans for the future.

At present, the rest of the museum is strong on robotics/expert systems, computer history, and graphics applications. The center of the robotics exhibit is the "Smart Machines Theatre," an automated (of course) presentation of three decades of advances in robotics technology. Surrounding the theater are many terminals and demonstrations demanding the visitor's participation; even on the busy day of our visit there were many open ter-

minals. One of our favorites was a robot arm which picked up blocks and arranged them to spell a word, with a surprise ending! How about a "smart wine advisor" that guides your wine selection using voice recognition?

Other demonstrations will be familiar to the Atari user. Remember, this is a museum and not specifically an ongoing demonstration of current technology, i.e., many of the applications on exhibit are available for our own Atari ST's and 8-bits. Unfortunately, we didn't see any Atari computers either serving as demo terminals or running programs. We did see working IBMs, clones, MACs, MAC IIs, and Commodores (Amiga and 128) in the Smart Machines Gallery, and Apple IIGS computers (among others) in the "Computer and the Image" section.



In the latter area, devoted to graphics applications, Atari users will be most impressed with a 20 minute presentation of computer generated animation sequences. ST and 8-bit owners, already with access to great graphics oriented machines, will feel at home with many of the other displays and working programs in this section.

Computer Classics

Computer history is a strength of the museum, beginning with a display of four computer classics: UNIVAC I (1951, Remington Rand); PDP-8 (1965, DEC); CRAY-1 (1976, Cray Research); and the IBM PC (1981, IBM). Defined as switching capacity per second, at constant 1990 $, units of computer power have increased from the vacuum tube in 1951 (performance = one unit), to the transistor in 1965 (35 units), the integrated circuit of 1975 (900 units) and lastly the 1990 microprocessor--400,000 units.

"Computing in the 60's" recreates a 25 year old IBM 1401 ops center located in the Traveler's Company; you can sit down at an IBM 29 Card Punch and, well, punch cards. Atari users, running powerful STs and 8-bits in our homes and businesses, have to remember access to computer time and power is a new phenomena, and in 1965 things were a lot different. Testifying to this (and the sophistication of the exhibit) is a "note" visible among the clutter of the ostensible operator's (Fran) desk from an apparently rushed programmer (Tom): "Hey Fran, I could really use a little time on the computer to finish my program. If you manage to findme some spare time I'll take you out for a hamburger. Tom."

In an exhibit called "the Evolution of Personal Computers" sits, among others, an Osborne, Sinclair 2x80, NEC PC8012, PET 2001, Franklin ACE 100, RS-TRS 80, and the Altair 8800. A graveyard of sorts. Atari? Well, nearby there is an Atari Games arcade machine (simulate driving a race car or something).

Moon and Back with 36 K

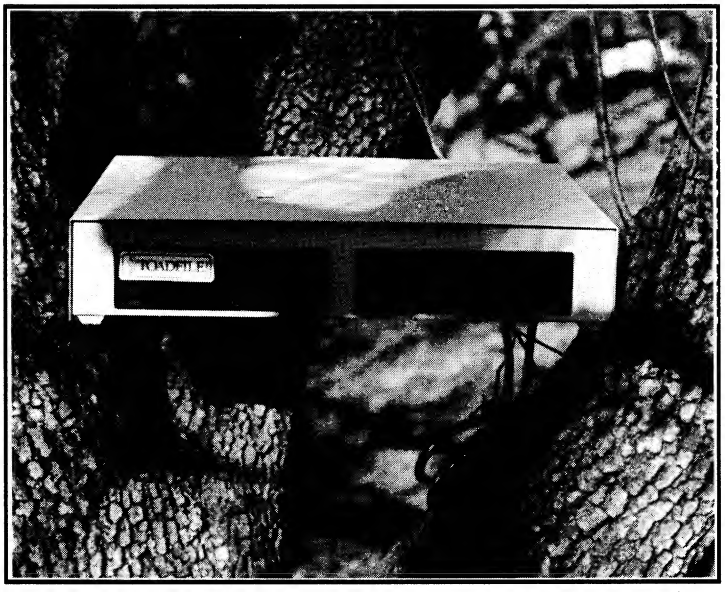
There are other "historic" machines available to check out. How about the 1890 census "computer" which used punch cards or a system created from tinker toys which played tic-tac-toe? Considering how far computer technology has advanced in the past 20 years, have you ever wondered just how powerful the onboard Apollo Guidance Computer (AGC) was, compared to an ST or Portfolio? Each AGC weighed 70 lbs. and cost $350,000. With 2,826 integrated circuits and 550 transistors, the AGC's memory had 2,048 words of erasable core memory and 36,864 words of read-only core rope memory. It doesn't seem like much, but it got us to the moon (and back) and in the process contributed to advances which we all enjoy today. You can see, learn about, and interface with the AGC and many other unique devices, gadgets, and machines the next time you visit Boston. Have fun!

The Computer Museum is located at 300 Congress Street, Boston, MA 02210. Open daily during the summer and Tuesday- Saturday in winter, call (617) 423-6758 or (617) 426-2800 for more info. Admission is $6 for adults, less for students; prices, like the schedule, are subject to change. You can take photos for personal use. This is a very easy facility for handicapped visitors to access. There is a museum store with a lot of gadgets and things which will appeal to many, a little expensive (but sales go to support the non-profit museum). Call or write for a store catalog if you can't make the trip.

Maybe Atari and/or a user group can approach the museum with an offer to donate an Atari computer and appropriate software for inclusion in one of the ongoing exhibits...maybe a 3-D graphics demo (with stereo glasses!) in the "Computer and the Image" area or an intelligent MIDI application ...or...?

Suggested reading before visiting: "Patriots" by A.J. Langguth (1988) (about the American Revolution) and "Hackers: The Wizards of the Computer Revolution" by Steven Levy (1984).

Enjoy a Sunny Day!



T.F. Magnum Enjoying his Day in Severna Park

Don't Waste More Time!

Why stay inside all day doing heinously boring computer drudgery? Isn't it time you bought a hard disk? But not just any hard disk! Buy the **Toadfile 44!** It's the **only** hard drive for the Atari ST that gives you the flexibility of **unlimited storage** along with the **legendary *peace of mind*** you get from our reputation and our warranty! We're not just saying that our reputation is legendary, either! Take a look at the impressive list of famous **Toadfile 44 Owners:** *The Neville Brothers (Famous Musicians), David Small (Gadgets By Small), LeRoy Valley (ST Informer), Joe Waters (CN Editor), Frank Sommers (CN ST Update), John Barnes (CN Junkyard Pussycat), Imagen Corporation (Makers of Ultrascript), General Dynamics, Electric Boat Division (Makers of Nuclear Submarines).* So don't waste another sunny day, waiting for, losing, or erasing floppy disks! Get a **Toadfile 44 TOADAY!**

TOADFILE *Spring Deals!*

Neville Brothers Buy a Magnum!

In March, the Neville Brothers, noted musicians, bought a Toadfile 44 Magnum! If Art Neville, Dave Small, and General Dynamics all trust the Toadfile 44 Magnum, shouldn't you? Get yours toaday! Toadfile 44 with three cartridges!

Toadfile 44 Magnum - *Only $849*

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Toadfile 129Z (44 & 85MB HD 24ms).....$1099
Toadfile 144X (44 & 100MB HD 25ms).....$1299
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Atari 520STfm 512K RAM	$299
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Atari TT030 8-80	$3299
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Atari PTC1426 TT Monitor	$479
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Magnavox 1CM135 Color Monitor	$319
Atari SM124 Monochrome Monitor	$159
Atari SLM605 NEW Laser Printer	$1099
Atari SF314 DS/DD Disk Drive	$149

Please call for availability and current pricing before placing orders for TT030 or Mega STe - you must qualify to buy. Get a 1 Year extended warranty on your Atari Computer for only $49.95 extra! All upgraded computers come with a full warranty - something you wouldn't get upgrading it yourself.

Learn About Hard Disk Drives!

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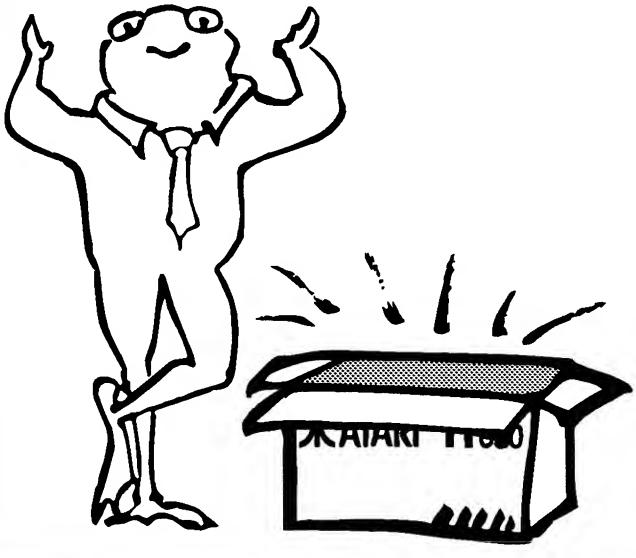
HP Deskjet Ink Cartridges	$18
HP Deskjet Ink Refills	$14
Supra 2400 External Modem	$109
ICD AdSpeed ST 16MHz Board	$239
Atari Megafile 30 Hard Drive	$379
Talon Supercharger	$419

*Hey! We're the largest and best **Authorized Atari Business Computer Center** on the east coast! Send us your computer repair work! We're fast, efficient, reasonable, and experienced too!*

After a long year on the road with the World Peace Tour, Toad's back, and ready to try new things. Today, we see, he has gotten a new Atari TT030 computer. With his new computer, he'll learn things he never did in school! Make sure to "Learn How with Toad," as he tries new software and hardware, and learns more about himself and his computer! Maybe you should get a new computer too, as the TT030, Mega STe, reduced-price 1040STe or 520STfm may be just what **you've** been looking for!



On Our Mailing List?

If you're interested in Atari Computers and you're not on our legendary mailing list, then you're really missing the chocolate cake. To be on our mailing list, all you have to do is call us and we'll be more than happy to put you on it. If you're on it and are goofy enough to want to be removed from it, that too can be cured with a simple phone call. I can't wait for the next mailing!

Eight Bit Cool Catalog

Since we started buying and selling used eight bit hardware and software, a lot of people have been saying that we're a bunch of real saviors. Now, after collaring the systems of many people, we have been able to assemble a full catalog of what we've got. Quantities may be limited. But we do have some rare finds that you may never be able to find again! Call for our latest catalog!

Spectre Combo-Deal!

The Spectre GCR is the best Mac emulator anywhere. Since the Mac ROMS have become hard to find, Toad Computers has announced their Spectre Combo-Deal: **Only $499 for the Spectre and ROMS!** Get this while supply is available, because the Mac ROMS are *impossible to find!* Call our order line and order your **Spectre Combo Deal** today - while you still can!

New Laser Printer?

Yeah, as a matter of fact, it is! This advertisement was printed on the new Atari SLM605 Laser Printer. Compare this ad to last month's ad! I think you'll see the difference between the two! From the 804, you'll see a lot of missing pixels and light areas. The 605 just doesn't have that! Compare for yourself. I think you'll find that the 605 has quite nice output and it's only **$1099!**

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Call (301) 544-6943 for long stuff that isn't going to make us any money. Call (301) 544-1329 to FAX an order. Prices listed reflect a 4% discount for cash, money order, or personal check. MD residents please add 5% sales tax. Thanks again, Toad customers, for all the growth we've had.

Making Money with Your ST

Part II: Resumes

Atari provides an excellent tool for creating income

by DENNIS J. O'BOYLE

The day I brought home my ST, I had no idea I'd soon make $50 for creating two resumes. I wasn't even sure of *all* the computer could do for me, but I knew right away it would help with a short-term project.

I was interested in working in the advertising field and understood a "portfolio" of my ads would be helpful. I'd been creating ads more or less the old-fashioned way, with my 1953 Remington-Rand typewriter, rub-off lettering, clip art and rough pencil sketches.

Oh, how I hated those rub-off letters, which were expensive, hard to work with, often flaked apart and frequently needed to be re-applied. And typesetting! You had to "cast off," or measure, type in column inches and determine point size, leading and what not respective of available space. Just the thought of doing it makes me cringe!

The ST changed all that, even though Don Shane (a friend with a Macintosh) told me, "The only things Atari makes are toys." He considered the ST some kind of joke. I had the last laugh when he found out about the Atari ST's compatability with IBM and Macintosh through the use of emulators.

Beginnings

The first document I created was my own resume and cover letter (using Soft Logik Corporation's *Publishing Part-ner*) for my advertising job hunt in the mid-1980s. Then I created ten ads, each based on a strategic objective, as samples of my creative and writing talents. I had much better job-hunt luck with the ST-created documents, and several companies called me for interviews.

Joe Paterick (another friend) spread the word that I wrote great resumes and had a computer, and within two weeks of buying the ST, I did resumes for him and someone else he knew. That's how I made my first $50 with the ST. You might call it how to make money without really trying.

Since then, I've developed dozens of resumes that have helped their subjects get interviews leading to better jobs. Along the way I absorbed 16 books about resumes, getting hired, interviewing, hiring and so on.

And I applied for many jobs, submitting hundreds of resumes, learning the hard way to write ones that easily get interviews.

Knowing *how* to put a resume together is as responsible for getting the work as having the ST computer system. Although people are flocking to print and copy shops for resumes like sheep to the slaughter, most of these places only desktop publish or otherwise print what you give them.

For $19.95, you don't get a well-devised, customized, individualized resume, just a printed one that looks the same as everyone else's, and some copies with matching envelopes and blank sheets for cover letters.

Even the resume-writing services that advertise as "professional" are suspect. "Professional" in the sports world means "the best." In business, it simply means "paid for doing the work and doing it everyday." So there's a big difference of terminology, and "professional" services can be quite far from the best available. These services charge up to $500 for a resume, and no one guarantees results.

Remember, simply having a scalpel doesn't make you a doctor (at least, not one I'd trust for orthognathic surgery). And just saying you can desktop publish a resume doesn't mean the resume will get you or anyone else the result you want (a job interview).

How You Can Get Resume Business

As ST owners, we are a very enthusiastic and dedicated group. We can provide superior resumes as a result of our attitudes and our computer output capabilities. Think of enthusiastic people you know. They're "people magnets," aren't they? You can be one too! And you'll begin finding people who are interested in your approach to resume writing *because it works.*

Create a small (about one-fourth the size of this page) ad for your resume business, and post copies on bulletin boards everywhere. Start by re-doing your own resume using the tips in this article.

Let everyone know the purpose of a resume: To get an interview.

You must know a friend or relative looking for a job right now. Step in with your new abilities and help make the job search a success. The word will spread.

An Effective Job Hunt

Resume-writing outfits know the money-paying public probably views the job hunt game and its resume aspect as some sort of mysterious art. Well, the truth is, it *is* a mysterious art simply because it's one we don't practice. But like anything else, you'll get better at it in time.

Think about the day you brought home your ST. Aren't you better at using it now than you were then? Most of us are good at the jobs we do, but not at *get-*

ting jobs. The point here is, getting hired is an art unto itself.

It appears most of the resume service bureaus want you to think the resume is the only ingredient in an effective job search. Here's some news for them, and you. The resume is only one part of a job hunt.

In fact, I have a list from a local job search support group. The list identifies 104 items essential to attaining gainful employment. If you're interested in the list and a free resume critique, send your resume and a self-addressed, stamped envelope to me at 1411 Unit "U" W. Edgerton Ave., Milwaukee, WI 53221-3563.

Research

Check out the resume writing businesses in your area. I checked with the so-called "resume-writing services" to see what they do and how much they charge. I started collecting those handy little resume brochures from places like government offices, the public library and print/photocopy shops. I even have one from a pack of paper I bought.

I guess everybody wants you to think they're experts about resumes, so be careful out there. A lot of services are like car dealers; they all claim they'll give you the best deal in town. And they will, in a manner of speaking. The best deal for them!

Curiously, none of these how-to-do-a-resume pamphlets or services offer quite the same advice.

Why is that? Most doctors might say, "Take two aspirin and call me in the morning." Advice for the lovelorn suggests, "Always look your best. Smile. Get the person's attention. Say, 'Hi,' and eventually they'll start talking to you, leading to a date and possible matrimony."

Military commanders would say, "Bomb them out of their senses, gain air superiority, then move in with ground troops." Mechanics advise, "Its your muffler. You need a whole new system." But in the resume field there seems to be no agreement about what you should do to get an interview.

What Works

In the final analysis, your resume works if it gets you an interview. Period. That's the only goal or objective of any resume. Books and companies that promise "Resumes that get you hired!" should be seriously questioned because that simply is not how things work.

No one picks a resume (ST-published or otherwise) out of the stack of a thousand others and says, "My. What a great resume. This person can start Monday."

If they like your resume, they might call for an interview--if they haven't already offered the job to someone they know (or someone somebody else at that company knows).

Your appearance, personality, interviewing technique, work ethic, ability to get along with others, experiences, accomplishments, performance, references and a lot more figure into the hiring scheme. That's reality in the employment field.

Steps to Success

Take a simple but effective approach to writing resumes on your ST:

1) Be honest at all times.

Do the right thing. You'd hate to be fired, or have anyone else lose their job, because you stretch the truth or lie. And how would the reason for being fired, that you lied, look at the next interview?

Write guilt-free resumes you can live with. When in doubt, pray for divine guidance. You'll see the light.

2) Analyze and present the position/career move from the employer's perspective.

This means state an employment objective or career goal and present your resume in terms the employer will respond to. The ST makes adapting resumes to specific situations quite easy, so there's no excuse for not having an objective or using a one-resume-fits-all approach.

A job objective is not, "To get an easy job that pays well," but, "To continue providing outstanding results and increased sales as a marketing assistant." See the benefit to an employer in the last one? That's what works (gets interviews), if only because it's different.

3) Summarize your qualifications and strengths.

While few of the resume books or services tell you to do this, an initial statement about what you can do and how well you do it sets the tone for the rest of the resume.

You can state factual evidence that proves you are strongly qualified and well-accomplished. Have a subtitle such as, "Summary of Qualifications." There, describe yourself in a self-advertisment and state your overall abilities like (using the marketing assistant example from #2 above),

"Thoroughly experienced, well-educated, professional marketing assistant. Progressively successful accomplishments in all phases of marketing, including [insert specific requirements from the newspaper ad or job description if available, or some of the more common, impressive ones you have experience with] research and analysis; data base administration; focus group interviews; advertising design, writing and media management; requests for assistance/training; and sales activities including meetings, vendor interface and report preparation. Substantially adept at developing new territories and increasing sales in well-developed markets."

Get the idea?

4) Emphasize employment accomplishments.

No matter how different the new career or how unrelated to your experience a job may seem, there are always areas in your work, educational and extra-curricular backgrounds that can help you appear as a qualified candidate.

Even househusbands ("domestic engineers") amass competency (although their wives may argue they do not) in areas including personnel management (motivating children and getting them off to school), purchasing (grocery and other types of shopping) and so on.

You've heard this before. Just think seriously about what your activities really mean in a larger, transferable sense, and put it down. Your future employer will be glad he spotted you!

5) Be positive about everything.

Develop a cheerful, enthusiastic tone, but don't become overly friendly, "bubbly" or cute. Make yourself sound like the winner you are, confident but humble, and not a conceited egotist. Avoid appearing too good to be true, because the employer may wonder, "If this one's so special, why the need for a job?"

6) Proofread, edit and correct your resume.

Make sure your resume is accurate. The information content, organization, punctuation, grammar and spelling have to be perfect.

You should see the technical writer's resume that came to me in the mail, unsolicited, full of mistakes (14 in all), rivaled only by an "Ain't I great?" cover letter, replete with 19 errors. I know mistakes happen, but in resume-writing, take time to eliminate them, especially if you're a writer. Who wants a careless employee?

Polish your resume, saying as much as you can to create interest in scheduling an interview, but don't ramble on. If you can keep it to one page, so much the better, because no one has time to read a novel. Go to two pages if you have to, use a readable font (10 point size or larger) and keep things spaced out with generous borders for eye appeal.

7) Use classy, conservative paper stock.

Sure, you like how your resume looks on magenta or flourescent green, but obvious attempts to stand out from the crowd may backfire, causing you to appear unconventional and hurting your employment chances.

What's wrong with white paper? Brides wear white, and there are no questions asked. I like white and antique white colors and linen or cotton bond paper. Stand out from the crowd in content alone, unless you're a graphics person or heavy-metal band member and creativity counts.

8) Use your ST to create a data base of resumes.

Many of us have worn several hats in our jobs, opening up various employment opportunities. For example, an ad agency vice president can probably create resumes for positions including marketing director, public relations official, advertising manager, publications editor, copywriter, account executive, and promotional coordinator. That's what I did. There won't always be an ad for "Ad Agency Vice President" in the paper, but I can flat guarantee there are always ads for some of the other positions.

9) Track your efforts.

With each resume and cover letter mailed, print out a copy and attach the newspaper ad to it before you file it away. That way, when they call, you can pull out the exact information they're looking at and you're prepared to handle their questions better.

Or, if a rejection letter comes, staple it to your copies of the ad, resume and cover letter. Over time, you'll see some of the same companies re-advertising, and you can check the record to analyze and create a superior effort the next time around.

Rejection letters often tell lies like, "While your credentials are impressive, we regret they are not a match for our current needs," when you're perfectly qualified. Or, "We'll keep your resume on file for six months and contact you should an appropriate opening occur." A month after they send you these lies, the same ad runs again.

Keep your spirits up; companies that run ads every six weeks probably are horrible places to work. One benefit to rejection letters is that you learn the names of people to contact at companies that didn't provide them in the ad. Use the names in the future, or correspond with those people, asking exactly why you weren't considered for an interview.

Get a load of this: Eleven months after responding to a newspaper ad, the company called me. Did I remember replying to them? I searched through my "JOB HUNT" manilla file folder and found the hard copy of that letter and resume in less than thirty seconds. Incidentally, it was for a position as a resume writer.

Don't limit yourself to ads in the newspaper. Call companies where you'd like to work and see if they'll accept your resume. In your letter, remind them of your phone call so they don't toss your stuff away as unsolicited material.

10) Hang in there, baby.

Whether you use your ST for creating resumes for customers or for your own job hunt, it may take a long time before an interview is scheduled somewhere. Some companies advertise just to see who's available and have no intention of hiring.

I've encountered ad agencies that solicit artists and writers to "Send resume, salary history, and five (5) non-returnable samples to Box 666." Then they look at the samples, get ideas for the work they're doing, and never hire anyone.

One time, I sent twelve samples to an ad agency that only asked for five (my usual overkill approach) and guess what happened? One of the partners called to request even more samples!

I hooked him into an interview, saying it was obvious he was interested in my work. Later I was told the place wasn't hiring unless they "land this one big account." They sent me a form rejection letter the following week. As far as I know, they never hired anyone. No doubt they added countless samples to their files for future reference.

The Future

We're living during a transitional period in the United States. Many manufacturers and heavy industries are gone. The country is becoming a service-oriented society, but exactly what will be serviced is not known. Job security is a myth today. You're your own job security. Entrepreneurs with computers in their homes are on the forefront of this new culture.

Those of us with ST computers are better off than people without a computer. Employers are eliminating benefits and full-time positions to save costs, offering no benefits and part-time hours. In essence, the workplace is and will continue becoming vastly different from a generation ago.

Prepare yourself for possibly long response times on your resume mailings. While you're waiting, improve your ST computing abilities and resume writing skill.

Avoid These Common Mistakes

Don't ever put, "Resume of (YOUR name)" centered at the top of your resume, followed by the lack of an employment objective. People know a resume when they see one and don't have to be led; "Of course it's a resume, why, it even officially says, 'Resume' right on top!" Leave the useless label off and save the space for stating benefits to the employer.

Leaving out an objective is usually an attempt to cover every conceivable employment opportunity. Not stating a career goal might indicate to an employer your inability to focus or the lack of a specific goal in life. Who wants to hire an aimless person? I can only think of Satan, and his wages are death.

Eschew boastfulness. This "Ain't I special?" approach doesn't get anyone hired. Successful resumes highlight the benefits to the employer, not what someone wants, who they are or how they feel about themselves. It's what you can do, in terms meaningful to employers and personnel departments, that counts.

Also, avoid, "REFERENCES: References will be furnished on request." This is another waste of valuable space. You'll be asked for references if they're desired.

If you're going to list references, then list the names, addresses and phone numbers of three or four professionals who will provide information on your benefits to an employer. Make sure ahead of time they've agreed to be references for you.

And don't list something like, "Todd F Ovokaitys, a neat guy whom I learned to play Asteroids with when we were kids. He's a doctor now."

My references might include people I've done work for or who know my abilities, like a former lieutenant governor, the public relations director of one of our state's largest companies, the president of a large, high-quality printing firm, and a famous broadcasting personality. Get the best references you can.

Self-advertise

Think of your resume as sort of a self-advertisement that you create on your ST, and structure the writing like effective commercials you've seen. Would you choose the product of an ad declaring, "We're so proud of ourselves! We're overstocked and want you to clear out our inventory," or the one stating, "Eliminates mistakes while increasing productivity, reducing time and lowering costs."?

I saw one resume-writing service's selfishly boastful, confusing 50-word "objective" for one of its customers (victims) that said, "Seeking multi-various opportunities for enhanced self-enlightenment, personal enrichment, professional fulfillment and holistic challenge within an erudite milieu of a Fortune-100 organization offering outstanding situational perquisites encompassing corporate propagation, frequent international travel and exposure to diverse executive levels to interface with applicant's exceptional communications aptitude, administrative abilities and managerial quotient."

Phew. While you re-read that a few times, I'll catch my breath. The woman never did get a new job. You can't win 'em all, but you can certainly improve your chances by writing a better self-advertisement.

Phrasing Accomplishments

Employers aren't as interested in your responsibilities as they are in what you've accomplished respective of your duties. Saying, "Was responsible for new marketing activities and related duties, including hiring," doesn't say this person actually did anything. He may have had those responsibilities, but instead of attending to them, he slept at his desk all day. Just like he used to do in study hall. Maybe that's why he's looking for another job.

Phrase it in a more precise and accomplishment-oriented way, "Executed comprehensive revampment

of marketing department. Created advertising campaign for new product introduction resulting in 3.1% increase in market share. Revised seven job descriptions into four; devised and implemented more efficient interview procedure and managed personnel, resulting in 18% decrease in departmental overhead expenses. Eliminated personnel turnover, increasing department productivity by 12%."

Take credit for what you've done and helped do. Now, you have to keep records on your performance so you can make these claims, or contact your former employers for help in determining exactly what it is you did for them.

Otherwise, when you're asked, "Why do you want to work here? Why should I hire you?" instead of saying, "Uh, that's a good question. Because I'd like to work here?" you can convincingly and confidently say, "Because I'm successful. I've always been, as evidenced by the accomplishments shown in my resume. And I'll make you and your company even more successful once I come to work here."

Of course, put it in your own words, so it sounds natural.

Emphasizing Positives

The positive benefits-and-accomplishments approach carries over to the Education sub-heading. A resume I did for an executive had this line on it, "I began as an Electrical Engineering major, but at the suggestion of my part-time employer, Professor and Department Chairman, I switched to Business and Marketing."

This makes the applicant sound somewhat unfocused, easily influenced and wishy-washy. Who would hire someone like that? You know who.

Based on an interview with the woman and other info, I changed it to, "Graduated with honors and 3.2 grade average. Majored in Business (Marketing) and Electrical Engineering. Made Dean's List 7 of 8 semesters while working 20+ hours weekly as an electronic products design assistant and customer service coordinator for Johnson Controls Corporation, Milwaukee, WI."

That sounds more like a prospect for the electronic controls marketing assistant position she applied for.

Summary

Ultimately, the proof of any resume effort is in the results. At the start of this article I mentioned my interest in advertising. My ST helped me get a very good advertising position, vice president of a leading creative marketing agency.

Over the years, I've had countless interviews, successfully changed careers (six times), and have helped others do the same.

When it comes to writing resumes, the ST is an effective tool for putting job-hunt knowledge together and making it look nice. Be honest, benefits-oriented and creatively original (but not outlandish) when producing resumes.

Today, writing resumes comprises about 15% of my business and I charge anywhere from $25 to $100 for a resume, depending on what's required.

Listen, ST owners, we can be competitive with the so-called resume-writing bureaus. And by charging only for productivity and not for office rent, sleeping bosses, secretaries and managers running around trying to justify their salaries and people trying to figure out what to do, we'll give better value to our customers. And that'll make the world a better place.

Think about what people really pay for. In the resume-writing service scenario, it's often for the illusion of a resume. Use your ST to create a real resume: One that gets interviews.

Go down to the local copyshop and watch how they handle resumes. Someone making a minimal wage usually sits at a computer, and every time a customer comes in, concentration is broken to serve the floor traffic. The resumes are created from whatever information the customers provide, and everyone's resume looks the same.

Other Ways to Make Money with Your ST

There are other ways to make money with your ST; resumes are just the tip of the iceberg.

In addition to resumes, you can use your ST to effectively design, write and produce public relations pieces or entire programs, technical manuals, data bases, newsletters, training guides, video scripts, advertisements, complete marketing campaigns, various proposals, corporate logos, business cards, letterhead/stationery, menus and other communications materials having to do with providing education, entertainment or persuasion.

Create a small ad about the benefits you offer and get it in front of people who need your services. I started out by creating and sending a direct-mail package and putting notices on bulletin boards.

The beauty of all this is, you can do it, too. Make some money with your ST this week. I'm nobody special; I wasn't born with a silver spoon in my mouth. Chances are, you weren't as disadvantaged as I was. And since I did it, you can do it, too.

So join me. Believe in yourself. Follow the guidelines here, and you'll find writing resumes is just one of the many ways you really can make money with your ST. And let me know the results!

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Legend of Faerghail

German Role Playing Adventure for Novice and Pro

Review by Alfred C. Giovetti

The ST Controversy

Legend of Faerghail from reLINE Software of Germany, imported under license to Electronic Zoo, is much like Bard's Tail, but it is equally as good as many computer role-playing adventure games produced in the United States. It is encouraging to see that Europe can produce something other than a good arcade game. Like Bard's Tail, *Legend of Faerghail* is fun to play, with places to explore and puzzles to solve; it should satisfy your craving for computer based role playing games.

Legend is a heads-up display game with wilderness and dungeons like *Might and Magic*. Some have even compared the rich graphics with *Dungeon Master*'s.

Electronic Zoo, reLINE Software, and Rainbow Arts appear to be interested in supporting the Atari ST and Mega ST format of games. ST users can find some poetic justice in the graphics found on the IBM version of *Legend of Faerghail*. reLINE Software could not be persuaded by their American distributor, that producing more than 16 color EGA graphics would be profitable, even in the United States' game market. How does it feel, IBM, when the shoe is on the other foot?

Thyn Plot ?

Legend of Faerghail begins in the town of Thyn. We are asked only to raise a party of six adventurers and take them to the neighboring county of Clydane to raise support in the war with the outlying area against the local elves. All other details about *Legend of Faerghail* are shrouded in mystery. No one knows why the elves have suddenly become bellicose. Thus is the intrepid band of adventurers thrust into the world of Faerghail.

Legend of Faerghail is composed of 27 maps of roughly 30 by 30 squares. (I found it particularly enjoyable and reassuring to map the whole game on 27 sheets of 30 by 30 graph paper.) The main map areas are composed of the two 30 by 30 wilderness areas called, "Wilderness East" and "Wilderness West." Thyn is situated in the south eastern central portion of the eastern wilderness. The neighboring town of Clydane is in the northwest central region of the western wilderness. You can pass from one wilderness to the other by passing through the dwarven mines, which cut through the impassible mountain range and forests that separate the two lands.

There are several major structures in addition to the two towns, the two wilderness areas and the seven-level dwarven mine. Much time can be spent exploring eight dungeons which include a vampire's palace, the elven pyramid, the temple of the dragon god, the Sagacita monastery, catacombs, and the evil dragon's volcano. The game has over 1200 rooms to explore. You must search these areas for hints on where to find the artifacts necessary to open the volcano and kill the dragon. Only thus can you free the elves from their evil agreement with the dragon.

Character Development

In the classic sense of a computer fantasy role playing game, *Legend of Faerghail* revolves around the intricacies of character development. Your first task is to select your band of six adventurers from the six available races, twelve available professions and two available sexes. But care must be exercised to select characters with the right mix of attributes and talents. The statistics of hits, magic, the eight languages, armor class, level, talents, spell lists, and attributes will increase as experience is gained in exploring and adventuring. *Legend of Faerghail* allows you to select all twelve professions and keep them in reserve in the tavern roster to meet situations best suited for special talents. But one of the biggest problems encountered in playing the game is the slow character development. Even after a hundred hours of game play, many professions remain below level six, while other professions, like healer and priest, are over the 33rd level. This disparity of character progression is unheard of in CRPGs.

Sexism in adventures? The female characters enjoy lower attribute starting values, supposedly to reflect the weakness of the fairer sex. The female characters do not have special female icons for the character representations. This is a pet peeve of many female and male role players who prefer their women characters to look the role.

Character Communication

Communication with non-player characters(NPCs) is somewhat strained in *Legend of Faerghail*. Messages are activated by certain positions on the maps. It is in rare instances that these messages involve real interaction with a character. An example of true interaction with NPCs is when you show the quest amulet to a healer in the

woods and she gives you a healing staff. Often you are given a message, only to find there is no way to get to the loot. In the mines you are told that there are spades hidden under the beds in the dwarves rooms, but no matter what you try you cannot get to the spades. In most instances the conversations and interaction with the environment are one way communications. Apart from the odd feel this gives to the game, the encounters and messages are quite informative and detailed.

There are over 663 messages in the game. There are about 10 different types of keys. There are over 18 word riddles with clues and solutions. There are over 80 different types of intelligent enemies with a great variety of artifacts with quite specific uses. For example, unless you complete a complex series of actions in the vampire castle you cannot exit from the building and will starve to death. In the Sagacita catacombs, you will need a specific artifact from the depths of the catacomb to exit them safely. The pyramids become a death trap if not approached correctly. All of this dying is caused by the lack of food.

Food Power

After a short time your party gets powerful enough to quickly eliminate most of the antagonists in combat. Rations are hard to come by. You may only obtain 14 days of food by sleeping in The Inn With Provisions. Otherwise, it must be chanced upon or gotten by killing game animals. Once you amass a great food fortune, be careful not to sleep in the inns, where your food will be stolen while you sleep. Also, save your game before you sleep in the wilderness or dungeons. Should you be robbed in your sleep, then reboot to the last save, and sleep again, with the hopes that you will not be robbed a second time.

Great Graphics and Sound

Legend of Faerghail's designers are European where ST and Amiga account for most of the game sales. This explains the stunning graphics of *Legend*. The IBM version has 16 color EGA graphics that are less than state of the art. The graphics are varied and interesting. A multitude of wall details change from dungeon to dungeon, with a fine use of color. The end result is a very pleasant game to play. There is no animation in the exploration phase. The sound effects and musical score on the ST and Amiga

....IBM version has graphics that are less than state of the art....

are first rate. Characters grunt and curse as the digitized sound patterns are converted to give the adventure proper realism. The IBM is limited to the PC speaker and 3-voice Tandy sound.

Classic Combat

The game provides intelligent alternatives to the hack and slash motive. When confronted by a group of NPCs in the dungeons and wilderness, you have the choice of greeting, trading wares, negotiating a withdrawal, or using the retreat and recruit functions, or, of course, the ever present fight option. Once forced into a fight by an unreasonable group of opponents, the combat phase commences. The characters are arranged in a single line with no possibility of putting weaker characters behind the stronger, better armored, ones. There are four positions in the line of varying proximity to the enemy, the killing file being the closest and the retreating position the furthest away from the action.

Combat proceeds smoothly through the menu based command selections, familiar to CRP gamers. Characters can defend, sneak, use an object or cast a spell. The combat can be rounded or quick. When rounded, a two-frame animated sequence shows the characters striking their opponents. Once combat is resolved, an orderly chart appears, showing allocations for experience, loss of hits, damage to weapons and armor, bonus points for a special talent, and gold and rations. There is a realistic but somewhat annoying practice of assigning damage to armor and weapons. These must be repaired either at the emporium in town or by the blacksmith while adventuring. A blacksmith is a good fighter, but his real asset is his ability to repair damaged equipment and magic items. The emporium can only repair magic items that you sell to them. They will refuse to repair magic items in your inventory. You need to sell the items to the emporium and buy them back to get them repaired there.

Experience is awarded for successful spell casting in and out of combat. It can be gained in combat for damaging an opponent as well as killing one. Experience can also be gained by using attributes, one of the better features of the game.

A Magical Multitude

There are 291 spells and six spell casting professions. The spells range from the whimpy first level spells all the way up to spells of the 20th level, such as earthquakes which a priest can use to kill all of the opponents, regardless of strength and level. Each of the 291 spells is unique in its powers, effects and resolution. Experience with the spells and spell casters is hard won, as only the healer and cleric advance fast enough to give the adventurer use of the full spec-

trum of spells before the game is won.

Nice Features

Legend of Faerghail has a Bank of Faerghail charge system where you can leave your money and make charge purchases at many of the emporia in the land. Beware of using the bank to store large sums of money, because the Banks of Faerghail have been known to bankrupt an unsuspecting large depositor with bank failures. Sound familiar? Keep some money on a character in the Inn roster.

Legned also has an auto-mapping system. You need to locate a magic ball, (found in a southern alcove about 15 paces west from the northern mine entrance in the northernmost corridor of the first level of the mines). Once you have the magic ball, press the hot key M to get a magic map.

Legend of Faerghail has eight languages that allow you to communicate with the inhabitants and denizens of the world. Communication provides for trade, recruitment and negotiation of peaceful withdrawal. The attribute of concentration has a direct effect on the ability to learn languages and cast spells and is a particularly important and powerful attribute. Languages do not enhance or reduce one's ability to glean information while exploring. The information in the dungeons comes to any who can survive to get to the hot square that contains the knowledge.

Irritating Inventory

The inventory is limited by the weight that the characters can carry according to their strength and the number of available inventory slots. While I can understand the former, I cannot understand the latter. Light items are small and take up less space in pouches, packs and pockets. Characters should be allowed to carry up to their maximum weight limits without restricting the number of items they can carry.

The amount of gold you can carry is restricted only by weight, not item slots. Selling expensive items in the emporium will net you an increase in negotiation skill through this weight discrepancy. Sale of a full plate of armor while a character is near his weight maximum will provide an increase in negotiation skill. But the transaction will be immediately halted because of the weight of the 2,000 pieces of gold you get for the sale. Thus, you can sell it again. Repeated sales of the same set of plate armor can result in your negotiation skill rising to 100%. Negotiation is the deciding factor in convincing hostile groups to allow you to withdraw peacefully.

Endgame Panic

The Electronic Zoo version of *Legend of Faerghail* does not have a copy of the map on the back cover of the software manual. The absent map, which is red on black, provides directions for traversing the particularly lethal third level. Without this map, which Electronic Zoo has neglected to include, it is highly unlikely that you will be able to finish the game. You can obtain a copy by contacting the Electronic Zoo by telephone.

Super Siegurd

No discussion of *Legend of Faerghail* would be complete without a short explanation of Siegurd. Siegurd is a most persistent demi-god who wishes to assist your group. He will nag you until the game begins to break up, unless you recruit him. If you do not mind a demi-god in your group, who will hog all of your experience points, keep him because he can be useful. But if you want to get rid of Siegurd and just keep him in reserve for special battles, put Siegurd in the Inn roster where he will stay until needed. If you wish to get rid of Siegurd altogether, travel to Clydane where Siegurd will leave your party forever. Some have speculated that Siegurd has been put in the game to make the beginning game easier and the new player characters harder to kill. But Siegurd is not really helpful because he retards character development. My inclination is to discard Siegurd and reboot when a character dies and start over at the last "save game."

Conclusions

Legend of Faerghail is a good solid and well thought-out Computer Role Playing Game. The upside outweighs the downside. The sound effects, graphics and animation are first rate. The plot and the scope of the game are large indeed. It will give you many hours of satisfying exploration and gaming enjoyment. I rate the game "good to excellent," with average difficulty, and well worth the money for a computer role playing gamer.

Legend of Faerghail, $39.95, reLINE Software/Rainbow Arts/ Electronic Zoo, Inc., 3431- A Benson Avenue, Baltimore, Maryland 21227 Telephone:1- 301-646-5031

Can't Find Atari Stuff? *Start Your Own Store!*

by Stephen LaFevers

I understand that Atari hardware and software (especially 8-bit) is difficult to find in some parts of the country. Five years ago it was hard to find Atari stuff in Fairbanks, Alaska as well. That is no longer the case. One of the largest and fastest growing dealers in town is the dealer who sells only Atari computers, peripherals, and software. Here's how it happened.

While making the 350 mile trip from Anchorage to Fairbanks in a van with several other people, the conversation eventually turned to computers. As it happened, three of us had Atari computers, and by the time we completed the 9-hour trip through a snow storm, two others had decided to buy Atari computers.

The only problem was the video store that had been selling Ataris in Fairbanks (back then, a lot of computers were sold in video stores) had gone out of business. Those of us who already had computers had been purchasing other stuff by mail order, a lengthy, risky, and expensive business from Alaska.

Someone suggested that perhaps the Atari user group could start a small store to service its members. The idea caught our imaginations and we brought it up at the next meeting of the Far North Atari Club. Everyone there seemed interested in the idea, but five of us were really excited.

We went to a bank to see about financing, but the bank wouldn't even discuss the matter with us. The manager said there was no longer a market for computers and game machines. (This was before Nintendo.) We decided to open the store anyway. Each of us would put $1,200 into the pot instead of borrowing money. Two had the money on hand and would put theirs in up front. The other three would shell out their part a little each month.

We found a room in the basement of a small shopping center for $200 per month, ordered some 8-bit hardware and software, and put our own equipment up for display. None of us had one of ths new STs. We built shelves and tables out of plywood and 2x4s and started holding club meetings at the store.

Since all of the partners worked at regular jobs, the store could only be open on evenings and weekends. The partners took turns working in it along with volunteers from the club. Our store was hard to find, had only word-of-mouth advertising, and sold only 8-bit stuff. We didn't think we would ever be able to afford to stock STs, and hoped with a lot of luck not to lose all our money.

The store opened in April, 1985 with about $1,500 in goods, and the club members were our customers. Any money taken in was used to purchase more goods. Rent was paid by the partners who were shelling out their $1,200 in installments.

Workers were not paid, but then there usually wasn't much work. On a typical night, one or two, or perhaps no, customers would come into the store, but we were having a lot of fun and learning a lot about our computers. We even wrote a few programs!

When we sold our first computer to someone not in the club, we were overjoyed. Then, that person came back a few days later and bought a second 130XE, disk drive, printer and modem ... and he brought a friend along who wanted the same thing! We were elated--we were also out of hardware!

We ordered more hardware, and software closeouts and over stocks from other dealers and distributors. But we seemed to always be out of hardware.

Then one of the partners bought a 520ST. Naturally, he set it up in the store for people to see; and before we knew it, we were taking orders for them.

By August, the little room downstairs would not contain our goods or our customers. After talking the mall manager into a special trial rate, we moved upstairs to the mall proper and tripled our space. That was scary! But as luck would have it, one of the partners became unemployed about that time and another moved away. The one who moved sold his share to another club member, and the one who was out of work started keeping the store open during the day. We also began stocking STs.

Three months later, we moved again--into the largest store in the mall! By the time the store had been in business 12 months, it had done a quarter million dollars in sales. This in a town of 35,000 with six other computer stores for competition, although nothing else can really compete with Atari computers.

Sales doubled the next year, and went up another 50% the year after that. Two established computer dealers went out of business during that time, and nobody even tries to sell Commodores or Amigas in Fairbanks anymore.

None of the people who started the store is still a partner. They have all been bought out by other club members, but the store remains on solid footing and continues to grow. Club members still volunteer time in the store.

One thing has changed, though. Instead of the club supporting the store, the store now supports the club. It pays for the club newsletter, gives discounts to club members, and provides free training once a week.

Think about it. If there's no place in your town to buy Atari stuff, don't gripe about it. Take advantage of the marvelous opportunity--start your own store! Atari needs dealers, and so do you.

Roman History & *Imperium*

As Boring as Ever

Reviewed by Samuel Van Wyck

Nary a Harsh Word

After almost a year of writing reviews for *Current Notes*, I noticed that I seldom had a bad word to say about anything. Generally, or so it appeared to me, my impressions were positive with only a few minor grouches (the incidental music to *Table Tennis* comes immediately to mind). Being somewhat new at this business, I began to ask myself if I were treating all my subjects fairly. Was everything really that good or was I merely reacting to the pleasure of seeing my name and work in print?

Not to worry--the world is indeed in balance! I have found a program that I thoroughly dislike. Its name is *Imperium* and it is published by Electronic Arts, now located in the UK. *Imperium* postulates the Roman Empire as it might exist in the year 2020. Space has been explored and is full of civilizations that may become hostile or friendly. "Hostile to whom?" you ask. Why, to you, of course. *You* are the leader of Earth's empire. It is your job to expand the fortunes of your planet and its alliance by means of military and economic maneuverings.

To help (and hinder) you at this task are a number of subordinate players whose dossiers are available. You choose who will become an ambassador or an admiral, depending upon such traits as loyalty, ambition, intelligence and so forth. A subordinate's performance and loyalty may be affected by rewards and promotion.

Your empire expands by colonization and maintains its territories by military or diplomatic action. Throughout all this, you must also keep the local populations happy via good government. Every fifty years you have to face *Vox Populi*. Fail to be reelected and it's, "GAME OVER!"

The Game Interface

With a single exception, the screen is presented in black and white. Color only appears when a galactic or solar system map is presented. This is in no way a drawback since the balance of the play is conducted via text and drop-down menus. There are sixteen of these and many have submenu levels beyond the first. Control is by mouse and occasional keyboard input. As they appear on the screen, they are:

Game Control Panel
Alliance Construction
Embargo
Set Taxation Levels
Treasury Politics
Subordinate Display
Military
Create Ark Ship
Create Antenna
Reports
Clipboard
News
Game Turn
Map

Running a Galaxy Isn't Easy (But Someone'sGotta Do It!)

For the player who enjoys getting into the finest details of governmental administration, *Imperium* offers a wealth of challenge. Exercising even a minimum amount of control of the various functions requires an effort comparable to completing one's income tax--LONG form. Some help is available, though. Should you not be ready to handle the entire load at once, the computer may be instructed to handle Military, Diplomatic and/or Economic matters while you concentrate on politics and keeping your subordinates under control. Computer management of any category may be suspended at will.

The very complete instruction book contains a tutorial which takes the novice quickly through the mechanics of basic setup and play. Most questions were answered by experimentation or a quick lookup in the appropriate section.

Play progresses until you have survived for 1,000 years or have conquered the entire galaxy (managing to be reelected throughout the process). Oh yes, you and your subordinates are potentially immortal thanks to a "Life Preserving Drug" known as *Nostrum*, a product found only on certain planets (shades of *Dune*, no?)

So What's Not to Like?

So is this a game I didn't like? Despite its many positive factors, I must answer "yes." My biggest objection is that I found it boring; like, watching a haircut would be more fun. Even after delegating most of the detail work to the computer, I found myself reacting to a warning such as "Attention, the Krellan battle fleet is approaching!" with all the enthusiasm usually lavished on a visit from my mother-in-law. Again, depending upon personal preference, this sort of thing might be just what someone else would enjoy best. Perhaps if there had been more graphics involved, I might have felt differently. As it was, the great amount of sight-unseen action was of little interest.

Many of the decisions faced in *Imperium* are akin to those encountered by an upper level bureaucrat. Indeed, this is the stuff

of survival whether you are running a real government or a computer simulation. After playing a few rounds, it is far easier to appreciate those wonderful folks in Annapolis and Washington who take on the detail work of government.

It's Not Copy Protected, But...

There is one major problem that anyone playing the game will share. The disk, as is pointed out in the manual, is not copy protected, HOWEVER . . . it comes in what they refer to as a "non-standard format." This makes the program seem to take forever to load. OK – so two minutes from boot to music isn't such a long time but we are becoming accustomed to things happening a bit faster than that. Trust me; after a few boots, it does seem to be too long to wait.

Of course, if the program were run from a hard disk, the load would take only a few seconds. Unfortunately, you can't get it onto your hard disk because it has to run directly from a cold boot. As a matter of fact, this thing doesn't really want to run if your hard disk is even in the same room with it! No, it's not copy-protected, but it loads, looks, acts, walks and quacks as if it were. The use of a non-standard format allows the entire game to be crammed onto a single disk. I'd gladly have paid extra for a two-disk distribution in a format allowing me to boot the thing in my own way.

There is also a documentation check required during play. As a rule I appreciate this form of protection as an alternative to more restrictive methods. *Imperium*, however, requires that the check be repeated at every game turn; a needless and unproductive bother.

I bought *Imperium* on the basis of a comment in CN to the effect that it was a logical extension of the game *Empire* to which I am totally addicted. Unfortunately, it falls far short of (or 'way beyond) that standard.

Imperium is the brainchild of Matthew Stibbe and Nick Wilson. It is distributed by Electronic Arts of San Mateo, CA and is available from various sources for approximately $30.

C-Manship Complete

If C Is Your Bag, This Is Your Book

Reviewed by Stephen D. Eitelman

Introduction

C-Manship Complete by Clayton Walnum is a "teach yourself to program in C" book. It is a collection of the articles by the same name that appeared in *Analog*, and *ST-Log* magazines from February 1986 through December 1989. The book starts out at an elementary level and gradually progresses to more sophisticated levels, culminating with a full-blown, GEM-based checkbook balancing program. The book sells for $19.95, and for an extra $10, the programs are available already typed in and compiled into workable programs.

I found the book to be unique: as far as I know, there is no other book designed to teach one to program in the C-language on the Atari ST. There are a lot of C-language books for MS-DOS machines, generic books that try to be machine independent and general C-reference books. But no other book attempts to provide a home-study guide that not only teaches the C-language as Kernighan and Ritchie designed it, but also teaches its machine-specific implementation on the Atari ST. Specifically, after the first eight chapters, Walnum turns his attention to programming with the VDI and AES routines, creating alert boxes, dialog boxes, menu bars, windows, desk accessories and other ST-specific library functions.

The book features both a very descriptive table of contents *and* an index that is actually useful! This combination is rare in ST documentation and makes the book do double duty as both an instructor and as a reference work.

For the beginner who has been brow beaten into believing that progress in computer programming means learning something besides Basic and wants more access to the GEM routines in the ST, this book is the way to go.

Please note that the book requires the purchase of a suitable C-language compiler and linker. The author uses the Megamax products--he started out with *Megamax C* and then switched to *Laser C* when it came out. Other compilers will require some modification of his source code, but that should be a good teaching example.

Organization

The first eight chapters cover the fundamentals of programming in C and, indeed, the essentials of programming in any language: input, output, string manipulation, looping, flow control, functions, libraries, classes, arrays, file manipulation, pointers, and structures. These chapters are, with the exception of virtual workstation introduction in chapter 8, pretty generic C. They should all run with little or no modification on MS-DOS or Unix machines. But beginning with chapter 9, the remainder of the book concentrates on GEM library functions, and again, does it all quite concisely and relatively painlessly. He even includes an animation chapter (chapter 26). The final five chapters, 27-31 inclusive, constitute the complete GEM application mentioned earlier.

The Programs

There are a wide variety of programs that not only teach the particular lesson the author had in mind, but illustrate the types of things one can do on a computer. There are a variety of arithmetic programs, sorting routines, a dice game, file manipulations, and then in the final two-thirds of the book, virtually every GEM-specific function is exercised.

Having the disks as part of my review copy, I first tried running each of the compiled programs. They all ran, but some are not very bullet-proof: I found several that were easily crashed or at least confused. But these programs are designed to be laboratory experiments, not commercial applications. And, making them more robust is a good programming exercise in itself. Next, I tried compiling and linking each one using *Laser-C*. They all compiled and linked except for Chapter 20, a slider and arrow exercise comprising part 4 of his Windows series. The program was originally developed with the earlier *Megamax-C*. Debugging it to make it compile and link with *Laser-C* ought to be an excellent "exercise for the student." Having suffered through too many such efforts back in the dim past of my college days, I left it alone! I also had some difficulty with the accessory in chapter 23--it did a cold start when I ran the compiled DA, but the version on disk ran fine.

To Buy the Disks or Not

Having the disks available alleviates a lot of tedious typing--just examining the length of many of the programs confirms that. BUT: a very significant part of learning to program is the debugging process. Learning to interpret the sometimes (usually!) obscure error messages that C compilers generate is a real art. It needs to be learned from the first program. Correcting typographical errors is a great way to

learn: you know the program runs and, hence, the source code is correct. The problem then is limited strictly to finding one's typos, a much easier task than figuring out what is wrong when the underlying source code may have errors in addition to the typos. So, at least for the first eight chapters, I would strongly recommend that the beginner type in each and every program. Then try to find the missing semicolon several lines back from a peculiar error message that has nothing whatsoever to do with the code it is complaining about!! After a number of typos, there gets to be a vaguely recognizable pattern in the error messages that will often lead one to the error quickly, but it takes some practice to develop this recognition.

Complaints

Few and minor:

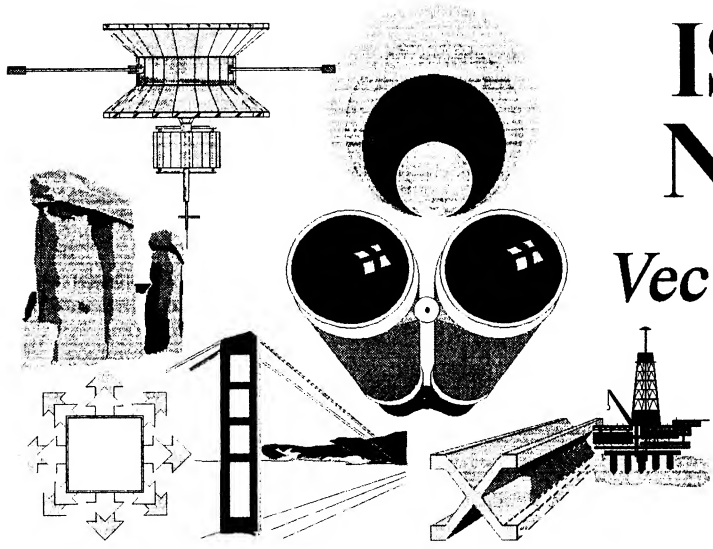
1) The book binder is one of these plastic spiral binders that have flat fingers. The binder mangles the interior edges of the pages after numerous page flips. I finally took the binder off.

2) There is no discussion of installing either the *Megamax-C* or *Laser-C* compilers. The beginner can spend an inordinate amount of time just getting these compilers up and running. Just what constitutes "environment variables" and what "tools" I really need in RAM are not explained very well in the documentation for *Laser-C*, for example. Chapter 25, devoted to a general discussion of compilers and linkers, could have been greatly reduced and could have addressed the difficulties of actual compiler installation instead.

3) There should be more "home work"--along the lines of modifying the supplied programs, perhaps. Studying the programs and reading his articles is good instruction; actually writing one's own programs, however, is the only way to really become proficient.

Conclusion

For learning C-programming and the VDI, AES and GEM libraries on the Atari ST, this book cannot be matched. It covers an enormous amount of material in relatively few pages, is inexpensive, is well indexed so as to make a good reference book and comes with the programs available on disk, also inexpensively. It should be an indispensable part of every ST programmer's library, no matter how casual your programming is.



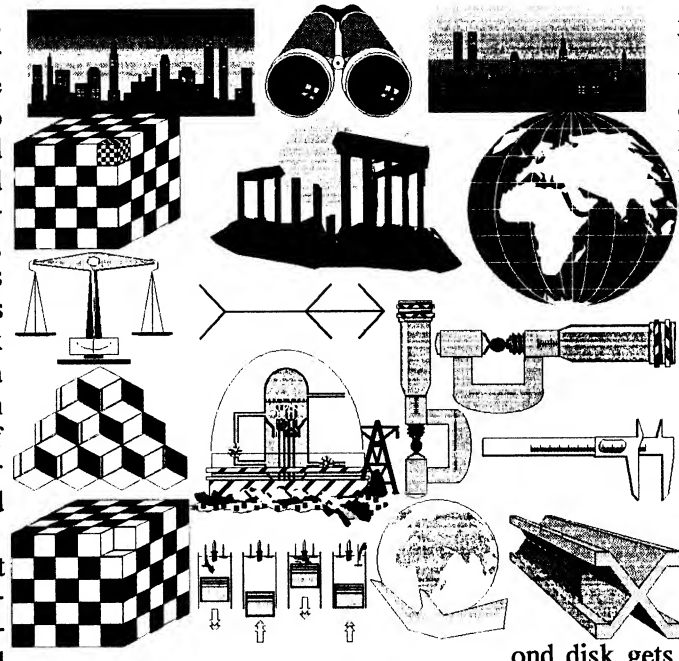
ISD Releases New Clip Art

Vector Graphic Clip Art Draws Fine Line

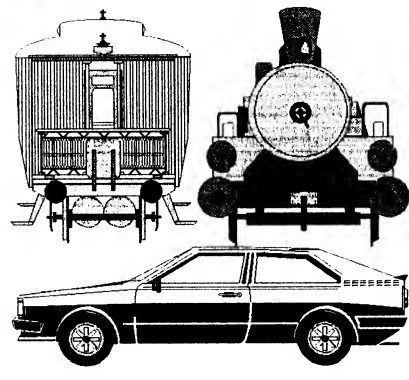
Reviewed by Frank Sommers

ISD Marketing, Canada, the development company that has produced several outstanding products for the ST, e.g. *Calamus, Calamus Outline Art* and *DynaCADD*, has just released new clip art for use with the vector graphics capability within *Calamus*. As most of you who dabble in DTP know, most of the canned clip art avaliable is just that, "canned." It looks like it should be on the comic pages somewhere, and thus its greatest utility is in dressing up comical situations.

There are exceptions, to be sure. *Drawart Professional*, by Migraph, is one of them. But these are also high-quality object-oriented graphics versus bit-mapped graphics. And if the resolution of your printer is high, the quality of the graphics will, likewise, be high. This means that dot-matrix printers will produce at a level of visual satisfaction considerably below that of the SLM-804 laser printer or the Hewlett Packard LaserJet III.

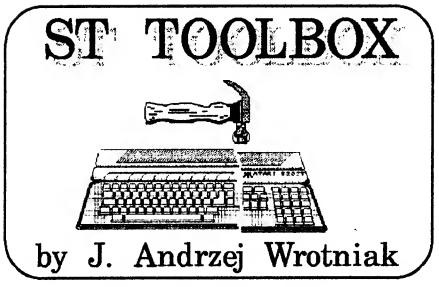


Also for reasons of bit mapping versus object orienting, the desktop publishing program outputs will vary. The *Calamus* vector graphic fonts in this collection of three disks will import nicely into Timeworks *Publisher ST* in .IMG format. As line drawings, they also will not overload *Publisher ST's* memory limits (see Richard Gunter's column in the October 1990 issue of CN on why) and you can print out a collection of clip art that would normally lock up *Publisher ST*. But zappo! When you compare the two products, the *Calamus* output is visibly better. Lines are darker, shading is more even and somewhat denser. Why? Presumably because of GDOS, which is what *Publisher ST* employs. Yes, that dreaded GDOS, again.



The Group Three vector graphics, consists of three disks. Disk #1 contains such "tantalizing" folders as Environs, Physics, Railway, Time, Subjects, and Vignettes, with fewer than 100 pieces of clip art on it. The second disk gets into astronomy, communications, chemicals, and things like tools. On #3 you get into folders for "Auto, Optical, and Symbols." The total is something over 400 little pictures to liven up your DTP efforts, or your letters, postcards, and notes--all printable on lasers as well as dot matrix with a bit of ingenuity.

$49.95, ISD, 2651 John St., Unit 3, Markham, Ontario, Canada, L3R 2W5; (416) 479-1880.



Programming as a State of Mind

...And More on the Sad Big Blue Universe

by J. Andrzej Wrotniak

For the last three years I have been planning to write for *Current Notes* a big story about programming in general, modern programming techniques and about programming languages. But, there was always something more urgent to write about.

In addition, there is always a question when you are planning such a project: who is going to read it? To whom is it going to be addressed? The readers without any exposure to programming may be intimidated and may just skip my column (this is a free country, anyway), while those with programming experience may think they know enough: "No bozo will tell me how to do my stuff!"

Therefore, let me state at the very beginning: this series of articles is aimed at readers at any experience level, from those who do not program (and do not plan to, but want to know what it is all about) to those who, indeed, have mastered the trade and would like to see what others may have to say about it. If you learn something from reading it, good. If you disagree with what I am going to say, even better--because in order to disagree, you will have to think it over.

What Is Programming All About?

Whatever you do on your computer, all of it boils down to entering some information from the outside world (keyboard, mouse, disk file), processing it, and returning the results to the outside world (screen, printer, disk). A program is a detailed, step-by-step instruction for your machine on how to get the information, how to process it, and how to return the results.

Internally, a computer is a pretty dumb device. All it knows is how to perform a few dozen simple things on integer numbers: add them, multiply, move around. These things constitute what we call the machine language. On the other hand, from simple elements one may create quite sophisticated constructions; after all, our brains contain just atoms of oxygen, hydrogen and carbon, with a small admixture of other elements.

Programming is the process of translating a description of the operations the computer has to perform, into sequences of primitive elementary operations expressed in machine language. Originally, in years even I can't remember, all stages of this operation were performed by a programmer, who started from a verbal description of operations to be executed and ended with a *program*--a series of machine language instructions (numbers in binary notation).

Programming Languages

Before going any further, let me make one remark. This is not a programming class, and we are not going to be very strict about terminology. At any level it would be quite difficult, as there is almost no common agreement on what terms denote what concepts in programming. For example, what is called function in C may be called a routine, subroutine, procedure, subprogram, method and some other names elsewhere. Surprisingly, this leads to very few misunderstandings. Therefore, some of the terms I am going to use will not be precise. Take it or leave it.

Now, back to the main subject, programming. Programming in machine language was a painful process not only because any operation had to be replaced with a series of very simple operations expressed in a cryptic code, but also because the machine-level instructions know how to deal only with the simplest data elements: machine words. This is how the programmer had to express the relevant *data objects*, be it numbers, text or images. The machine-level data objects had to be numbers, and they had to be referred to by their locations (addresses) in computer memory.

Back in the early Seventies, the necessities of life forced me to write a couple of simple programs in machine code. I am happy I will never have to do it again.

Therefore, quite early in the process, in the early Fifties, someone came up with the concept of *symbolic programming*, where the programmer would write his (or her, some of the earliest programmers were women) code in more human-readable symbols. A simple translator program would then translate these symbols into the machine code.

Programming in an Assembler

In the beginning, symbolic programming was just a matter of replacing instructions (some seemingly meaningless numbers) and memory locations (numbers again) with somewhat more convenient mnemonics. A line of code would look like **adda** x (take whatever you find in location named x, add it to whatever you find in a special location, sometimes called an accumulator or register **a**, and keep the result in **a**), instead of, say, **00001001 11100110**. Programs which would convert mnemonics into machine instructions were called *program assemblers* or just *assemblers* (some younger writers still think that there was a Mr. Assembler after whom they have been named). As-

sembly programming was a nice step in making programmers' lives less miserable.

In spite of progress in programming techniques, assembler programming is not dead. Although it introduces a very low level of abstraction, it gives the programmer full control over the computer. Modern assemblers are also smarter than the early ones. Among others benefits, they introduce *macros* to denote frequently re-used sequences of instructions, data objects somewhat more varied than just machine words, and other small niceties.

Programming in assembly language also gives the programmer some special macho feeling. Seriously, a discussion of pros and cons of assembly programming has to be postponed until we say something about alternatives to it other than coding directly in the machine language.

First High-Level Languages

The first widely used higher-level programming language was FORTRAN (yes, all in uppercase, for FORmula TRANslator). After all, the first computers were built for solving problems in physics (diffusion of neutrons in uranium), not for word processing!

FORTRAN made important progress in two areas. On the one hand, it allowed for a higher level of code abstraction, as e.g in

X = Z+2.5*X

which means to take whatever value is stored in location referred to as X, multiply it by 2.5, add the result to the contents of location Z, and store the final result in location Z. Note, that the programmer does not need to worry about *where* all intermediate results are to be stored, or *how* a real-number addition or multiplication is being done (although both questions are non-trivial on the machine level).

On the other hand, ***FORTRAN*** introduced the concept of *data objects* of various kinds. Obviously, X and Z store real numbers (i.e. numbers which may have a fractional part), not just integers, to which a computer is accustomed. One real number needs more than one machine word for storage, and the programmer does need to worry about the technical details of how X or Z is being expressed in terms of binary words, and also where it is stored.

The introduction of high-level programming languages wasn't painless. The scientist, being able to express his calculations in human-readable form, was delighted with the idea: "I just have to write it in FORTRAN, without any need for programming!" On the other hand, many computer professionals were *very* skeptical. Some, perhaps, were worried about their jobs; others had serious reservations about the quality of the program translated into machine code. "This will never work as fast as a hand-coded program!"

While FORTRAN quickly became a standard in scientific computing in the United States (with IBM behind it), and COBOL (COmmon Business Language), possibly the ugliest language ever invented, brought computing closer to banking and similar applications, the Europeans designed Algol (the ALGOrithmic Language, standardized as Algol-60) just a few years later, in the late Fifties. Other languages were proliferating widely; some hardware manufactures were introducing proprietary languages for their machines. Hardware was very expensive and software very cheap in comparison.

The Early Heroic Years of Computing

Allow me to take a personal trip down memory lane. In 1967 my friend Maria (now she *is* Debonair Software in Utah in her free time from teaching math and economics there) taught the members of my research lab how to program in a language called MOST. The language ran on just one computer, a Polish-made ODRA 1003/1013. Three years later, I switched to another language, Fala, developed in the Catholic University of Lublin, and running on the same computer line. The main advantage of Fala was that it would give you access to eight (yes, eight!) so-called "fast" integer variables, stored in the magnetic core memory, as opposed to the magnetic drum (a device somewhat similar to a hard disk, but with less capacity than the smallest floppy). Some programs would run up to six times faster! This may give you an idea about how and why some languages were invented.

During a year-long tour of duty at the Soviet cosmic ray research station in Tien-Shan mountains, just near the Chinese border, I had to do some simple programming on their computer, called NAIRI (a separate horror story by itself). To do that, one had to learn--again--a proprietary language, called AKI (Russian for Auto Code Engineer), different from anything I have seen before or since (and not only because all instructions were spelled in the Cyryllic alphabet).

What has all this to do with the subject of this article? Not much, besides illustrating the uncontrolled process of programming languages being born, cloned and conceived, all over the world (the U.S. Department of Defense discovered, back in 1976, that its software is written in more than 450 different high-level languages!). This may mean that programming in assembly may, to put it mildly, not satisfy many of our needs in computer programming.

In the next installments of this series, we will try to identify those needs, have a closer look at the basic concepts of programming and how they are implemented in various programming languages. We will cover the languages available for the ST and also those major modern languages which are not available.

Darek M. Right on Many Counts

Darek Mihocka, the well-known assembly wizard on the ST (and a recent addition to the ranks of Mi-

crosoft employees), made a number of valid points in his remarks on, among others, my *Sad, Sad World of the PC Clones* from the February issue.

Yes, he seems to be perfectly right talking about the mistreatment of dealers and programmers by Atari. Just recently my Debonair partner in Salt Lake City discovered that her local dealer dropped Atari from his line. Asked why, he offered some sad stories about his dealings with Atari; the buck stops here.

Atari's veil of secrecy around any technical data useful in programming of the ST remains, for me at least, unexplained. To access this information in online developers' forums you have to register as a developer (which costs you $250 or so). I can understand the need to protect any proprietary solutions, but restricting the information on how to, say, incorporate the enhanced file selector into anyone's programs, is difficult to explain. Would Atari be hurt if more people knew how to program their computers? [A few years ago I raised the subject with Mr. Sig Hartmann, then one of the top-level Atari people. He kindly admitted there is no reason to limit such information, and said something will be done here. Nothing ever was. Aren't we getting used to it?]

I am also aware of the fact that, price-for-performance, many of the cheaper 286 and 386SX clones are now matching or even outrunning the ST. Indeed, the ST is not the only possible choice, and we can argue whether it is the best choice for the money--although I think it is, considering the combination of price, performance and ease of use.

Most of the software available in the PC world runs under the PC- or MS-DOS, and DOS is a dog. In the case of many programs claiming compatibility with *Windows*, the compatibility means just that you can run them from *Windows*, but not much more. Most of the development tools available on the PC still have the 640k memory limit on memory available to produced programs and the 64k limit on a single allocatable chunk of memory. Only yesterday I installed the newest upgrade of a highly-acclaimed C++ compiler on my 386-clone. An excellent compiler, and the upgraded version, finally, takes advantage of the four megabytes installed in my office computer, but the resulting programs still suffer from the memory limitations as above. Some compilers would accept third-party tools, making better use of the available RAM; but the tools are very expensive and not standardized at all.

I am not claiming that developing good programs on the PC is impossible--just more painful, expensive and difficult. On the other hand, the PC-DOS market makes this occupation *much* more lucrative. This, among others, is why I am using a PC clone to make a living and an Atari ST to have the pleasure of translating concepts into computer programs.

From the user point of view, the PC world, with *Windows* or without, is much more intimidating than the world of an ST (or a Mac), at least as I see it. I still claim the ST is much more user-friendly and straightforward. Multitasking will not replace simplicity--most of us do just one thing at a time (although at the moment I am writing this column and sipping my Armenian cognac).

Anyway, it is difficult to disagree with Darek that my PC-ST comparison was (to some extent at least) one-sided. Of course it was, and it was supposed to be--after all, I am a hard-core ST enthusiast. And we should be glad Darek chose to present another point of view, together with supporting arguments--as a matter of fact, I was hoping he would do it. A programmer with serious experience on both systems, he is not someone whose opinion may be just discarded (and besides, arguing with him has always been a pleasure).

Finally, Darek Mihocka's plans of releasing an ST emulator for PC machines sound very exciting. Just remember that it was in this column, where you read the first report on the PC-to-ST emulator exactly one year ago (some gossip columns carried it on in good faith!).

by
Frank E. Kweder

Truchet2

This is a sequel to the program in the LAST issue of *ANALOG* (12/89). This one puts a character set in page 4 (only 3 characters) and prints the Truchet tiles in Graphics 0,1,2 and then in Antic 3, that strange text mode that never gets used for anything except a few commercial word processors.

```
5 REM TRUCHET TILES
6 REM IN TEXT MODES 0,1,2 AND ANTIC 3
7 REM BY FRANK KWEDER
10 P4=4*256
20 FOR X=P4 TO P4+23
30 READ N:POKE X,N:NEXT X
35 FOR GR=0 TO 3
36 IF GR=3 THEN GOTO 300
40 GRAPHICS GR+16*(GR<>0):POKE 756,4:
   POKE 82,0:POKE 710,144*(GR<>0):POKE 709,14:
   POKE 708,26:POKE 712,128:POKE 752,1
50 SCR=PEEK(88)+256*PEEK(89)
55 SCREND=SCR+239+240*(GR=1)+720*(GR=0)
   +560*(GR=3)
60 FOR X=SCR TO SCREND
70 Z=INT(PEEK(53770)/128):REM RANDOM 0/1
80 POKE X,(Z=0)+2*(Z=1)+128*(GR=0):NEXT X
90 FOR D=1 TO 1400:NEXT D:NEXT GR:GOTO 35
199 REM CHARACTER SET DATA
200 DATA 0,0,0,0,0,0,0,0,24,24,48,227,
    199,12,24,24,24,24,12,199,227,48,24,24
299 REM SET UP ANTIC 3
300 GRAPHICS 0:DL=PEEK(560)+256*PEEK(561)
310 POKE 756,4:POKE 82,0:POKE 710,144*
    (GR<>0):POKE 709,14:POKE 708,26:
    POKE 712,128:POKE 752,1
320 POKE DL+3,64+3
330 FOR X=6 TO 25:POKE DL+X,3:NEXT X
340 POKE DL+25,65:POKE DL+26,PEEK(560):
    POKE DL+27,PEEK(561)
350 GOTO 50
```

Ancient and Eyechart

More fanciful names for similar programs derived from the same article as Mweave below.

Ancient

```
5 REM ADAPTED FROM APPLE PROGRAM:
   CREATIVE COMPUTING
10 GRAPHICS 21:OF=0:C=1:W=3
12 SETCOLOR 0,5,6:SETCOLOR 1,2,4:SETCOLOR 2,1,8
20 DL=PEEK(560)+256*PEEK(561):POKE DL+3,71:
   POKE DL+6,6:K=PEEK(87):POKE 87,2
22 ? #6;" ANCIENT hieroglyphs"
23 POKE 87,K
30 FOR I=0 TO 30:FOR J=0 TO 30
40 C=C+0.032:COLOR C
50 PLOT I+OF,39-J+W:PLOT J+OF,39-I+W:
   PLOT 39-J+OF,39-I+W
60 PLOT 39-I+OF,39-J+W:PLOT 39-I+OF,J+W
62 PLOT 39-J+OF,I+W:PLOT I+OF,J+W:PLOT J+OF,I+W
65 IF C>3 THEN C=0
70 NEXT J:NEXT I
76 IF OF=40 THEN GOTO 80
77 OF=40:GOTO 30
80 GOTO 80
```

Eyechart

```
10 GRAPHICS 21:READ C:OFST=0:W=3
12 SETCOLOR 0,5,4:SETCOLOR 1,9,10:
   SETCOLOR 2,12,4:SETCOLOR 3,3,9
15 DL=PEEK(560)+256*PEEK(561):POKE DL+3,71:
   POKE DL+6,6:K=PEEK(87):POKE 87,2
16 ? #6;" ALIEN eyechart":POKE 87,K
18 FOR J=20 TO 39
20 FOR I=0 TO J
30 L=L+1
35 IF L>1 THEN READ C:L=0:IF C=-1
   THEN RESTORE :READ C
38 COLOR C
40 PLOT I+OFST,J+W:PLOT 39-I+OFST,39-J+W
42 PLOT 39-I+OFST,J+W:PLOT I+OFST,39-J+W
48 NEXT I
50 NEXT J
55 IF OFST=40 THEN GOTO 60
56 OFST=40:GOTO 18
60 TEMP=PEEK(708):POKE 708,PEEK(709):
   POKE 709,PEEK(710):POKE 710,TEMP
70 FOR Z=1 TO 50:NEXT Z:GOTO 60
80 DATA 1,2,3,-1
```

Robojazz and Cnyoyo

I wrote a version of JAZZ about 6 years ago. It was a title screen for the AUTOJAZZ program that Atari had (I think) in the 800 manual. ROBOJAZZ is updated from that with its own recently added sound using PEEK 84 & 85 again plus POKE 53279,0 console clicks for a drum beat.

CNYOYO is customized from a version I did for a store called Complete Computing in Lombard, Illinois.

Sometime after this momentous event, the store got a new manager when the owners started a new business. His name was Mike Gibbons. He later went to work for the FBI and, apparently from the ads in the magazines, fell in love with *pc ditto*.

Another highly modified version of the original JAZZ is the title screen for my Cassette LogWriter from ANALOG #44. This has just recently resurfaced on an ST disk in the CN Library: #349 Programs for the ST Xformer. Isn't it a small world?

Robojazz

```
999 REM JAZZ BY FRANK KWEDER
1000 GRAPHICS 17:SETCOLOR 3,7,2:
   SETCOLOR 2,5,2:SETCOLOR 1,9,4:SETCOLOR 0,4,4
1100 DL=PEEK(560)+256*PEEK(561)
1200 POKE DL+25,7
1300 POSITION 4,20:? #6;"robo FESTIVAL JAZZ ";
   CHR$(18);CHR$(16);CHR$(25);CHR$(16)
2001 FOR J=0 TO 15 STEP 5
2010 FOR JJ=-INT(PEEK(53770)/13.42) TO 19
2011 IF J=0 OR J=10 THEN SETCOLOR 1,9,ABS(JJ/2)
2012 IF J=5 OR J=15 THEN SETCOLOR 0,4,ABS(JJ/2)
2017 IF J=0 OR J=10 THEN POSITION J+1,ABS(JJ):
   ? #6;"cool ":POKE DL+24,6+(JJ=19):
   FOR W=1 TO 10+100*(JJ=19):NEXT W
2018 IF J=5 OR J=15 THEN POSITION J+1,ABS(JJ):
   ? #6;CHR$(202);"HOT ":POKE DL+24,6+(JJ=19)
2019 IF J=5 OR J=15 THEN FOR W=1 TO 10
   +80*(JJ=19):NEXT W
2020 IF J=0 OR J=10 THEN POSITION J+1,ABS(JJ):
   ? #6;CHR$(234);CHR$(225);CHR$(250);CHR$(250)
2021 IF J=5 OR J=15 THEN POSITION J+1,ABS(JJ):
   ? #6;CHR$(202);CHR$(193);CHR$(218);CHR$(218)
2025 SOUND 0,PEEK(20)+PEEK(84)*10+60,12,(J+6)/2:
   POKE 53279,0
2030 NEXT JJ:FOR W=1 TO 100:NEXT W:NEXT J
2040 FOR W=1 TO 100:NEXT W:
   GOTO 2001
```

Cnyoyo

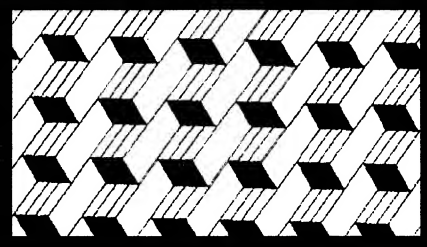
```
10 REM HYDRA/8
12 GM=31:DIM A$(2),B$(11)
13 FOR X=1 TO 11:READ N:B$(X)=CHR$(N):NEXT X:
   DATA 139,145,150,231,242,142,160,237,239,228,229
15 IF GM<16 THEN GRAPHICS 16:END
17 GRAPHICS GM:S=PEEK(87):K=0
18 GOSUB 200:POKE 87,8:POKE 711,152
20 POKE 710,116*((GM>16)*(GM<>24)):POKE 709,218:
   POKE 708,66:POKE 712,0:COLOR 1:SPEED=30
30 FOR A=0 TO 319 STEP 3:PLOT A,1:
   DRAWTO 319-A,191:NEXT A
40 FOR A=190 TO 1 STEP -2:PLOT 0,A:
   DRAWTO 319,191-A:NEXT A
80 FOR X=1 TO 80:NEXT X:POKE 77,0
90 TEMP=PEEK(708):POKE 708,PEEK(709):
   POKE 709,PEEK(710):POKE 710,TEMP
95 K=K+1:IF K>30 THEN GM=GM-1:GOTO 15
100 FOR Z=1 TO SPEED:NEXT Z:GOTO 90
200 DL=PEEK(560)+256*PEEK(561):POKE DL+3,71:
   POKE DL+6,12:POKE 87,2
202 A$="":A$=STR$(GM-16):LA=LEN(A$)
204 D1=ASC(A$(1,1)):IF LA=2 THEN D2=ASC(A$(2,2))
205 A$=CHR$(D1+96):IF LA=1 THEN A$(2)="":
   GOTO 208
206 A$(2)=CHR$(D2+96)
208 IF GM=16 OR GM=25 OR GM=26 OR GM=27
   THEN GOTO 220
210 POKE 87,2:POSITION 3,0:? #6;B$(4);" ";
   A$;B$(1,3);:POKE 87,S:RETURN
220 POKE 87,2:POSITION 3,0:? #6;" ";B$(4);" ";
   A$;:POKE 87,S:RETURN
```

Mweave

A Creative Computing Apple program demonstrating the use of "HLIN AT" and "VLIN AT" in Applesoft Basic was the source. I created some subroutines to simulate these commands. This is one example. The FOR/NEXT loop can be modified to stop the design wherever you think it looks best.

```
5 REM ADAPTED FROM APPLE PROGRAM:
   CREATIVE COMPUTING
10 GRAPHICS 21:VLIN=900:HLIN=950:OFST=20:W=3
11 DL=PEEK(560)+256*PEEK(561):POKE DL+3,71:
   POKE DL+6,6:K=PEEK(87):POKE 87,2
12 ? #6;" multiweave _________":POKE 87,K
20 POKE 708,82:POKE 709,52:POKE 710,6:
   POKE 711,212
30 FOR I=0 TO 15
40 FOR J=0 TO 39
50 L=L+0.5
60 IF L>4 THEN READ C:L=0:IF C=-1
   THEN RESTORE :READ C
70 COLOR C
80 XV=I:XH=XV:YV=I+4:YH=YV:KV=J:KH=KV
82 GOSUB VLIN:GOSUB HLIN
84 XV=39-I:XH=XV:YV=35-I:YH=YV:KV=39-J:KH=KV
86 GOSUB VLIN:GOSUB HLIN
100 NEXT J
110 NEXT I
120 DATA 2,2,0,2,3,3,1,2,0,-1
130 GOTO 130
900 REM VLIN XV,YV AT KV
910 PLOT KV+OFST,XV+W:DRAWTO KV+OFST,YV+W
920 RETURN
950 REM HLIN XH,YH AT KH
960 PLOT YH+OFST,KH+W:DRAWTO XH+OFST,KH+W
970 RETURN
990 REM MAKE -multiweave- IN LINE 12 INVERSE.
```

Optical Illusions and AudioVisualizer



Review by Ben Pochland

Bresnik's *Optical Illusions* and *Graphics AudioVisualizer* disk is part of a series of educational shareware programs recently released for the Atari 8-bits. For many adults, the initial response to "educational" software is to roll the eyes upward as the epithet "BORING!" escapes from the lips. My experience with these two Bresnik programs provided a welcome contradiction to the stereotype. I regard the programs on this disk as splendid examples of how a computer can be creatively employed to demonstrate textbook principles in a fashion so unique to the digital medium that the user is unaware he/she is learning.

I began by printing out the documentation files on the disk. Two such files are provided, identical in content, but thoughtfully formatted for printout using either a word processor or the COPY FILE P: command from DOS. I elected to print the docs using *AtariWriter-80* and my Epson 24-pin printer. On the second page of the printout some odd characters suddenly switched the Epson to an ultracondensed, unreadable font. I tracked this down to the use of several foreign-language characters that were presented correctly on the screen but which my printer interpreted as font-change commands. I found myself wishing for a README file describing what word processor and printer had been used to create the doc file. But the problem was trivial; and after two minor corrections, the six pages of documentation printed out fine. The documentation was well written and very helpful.

I booted up the disk with BASIC installed on my 800XL using a U/S Doubler 1050 drive and was greeted by a menu that allows you to select either Audiovisualizer or Optical Illusions. I went for *Audiovisualizer* first. *Audiovisualizer* is a neat little program that permits the user to hear and see the effects of programmed audio tones. One or two tones may be selected, and their respective frequencies and amplitudes set by the user. You can also set the phase angle of the chosen signal. Following the selection process, the waveform of your custom-designed tone is slowly drawn to a high-resolution screen as the tone is played through the XL's audio output. Tones are entered either as musical notes or as frequencies in Hertz (cycles/second). As a longtime audio freak, I found the combination of sight and sound a powerful experience. XL/XE users should have their output connected to a TV, a monitor with sound, or separate connections to a soundless monitor and an amplified audio speaker (my system is the latter).

The first thing you discover is that varying the phase angle shifts the sinewave display but has no perceived effect on the sound. Displays of single tones will be of interest primarily to folks who have not yet developed a sense of pitch and would like to get a feeling for the ranges of bass, midrange, and treble tones. Two-tone combinations were most fascinating. I composed a signal consisting of 2KHz and 2.2KHz tones with amplitude 8 and zero phase angle. I could clearly hear the sum and differencebeat tones while the complex sinewave display dramatically revealed the resonant enhancement and decay caused by modulation of the two signals. Three-tone chords (triads) appear commonly in music, and after 30 minutes of experimenting with this program I began to feel frustrated at being limited to two-tone chords.

Technophobes will probably avoid *Audiovisualizer*, but it is a "must-have" for anyone with serious interests in music, acoustics, physics, mathematics, or the biology of human hearing (including psychoacoustics). The program also has direct practical applications, such as providing tone standards for tuning musical instruments or simulations of intermodulation distortion in audio amplifiers. I studied acoustics in my college physics and music classes years ago, but it never had the visceral impact only a computer could produce. I have also spent considerable time experimenting on my electronic test bench with audio tone generators and oscilloscopes, but using *Audiovisualizer* on my computer for such experiments was far easier, more rewarding, and a LOT cheaper.

Optical Illusions would probably go over well at a party. The program consists of 10 common "eye-foolers" that all of us have probably encountered at one time or another. What makes this program educational is that it demonstrates what the illusion is, and gives it a name. For example, the persistence of an optical image after the visual stimulus has been removed is demonstrated in the "Afterimage" demo--a much milder version of the old "spots before your eyes" when someone has just taken your picture with

a flash camera. I had no trouble seeing the illusory effects of all the demonstrations except for the last one, "Reversing Stairs." Whether this was due to some peculiarity of my eye-brain coordination or a flaw in the program, I couldn't tell.

I have adorned my home with a number of copies of prints by M. C. Escher, and after experiencing the effects in *Optical Illusions* I realized one of Escher's basic techniques was to employ the "Necker Cube" effect in a number of his works. This is a mind-twisting illusion in which the viewer sees an apparently 3-D box drawn two-dimensionally. But blink your eyes a few times, and you aren't sure whether the box is being viewed from top or bottom. In fact, I was able to identify a number of the *Optical Illusions* demos in the works of Escher, including the "Cafe Wall," "Three-Pronged Blivot," and the "Kanizsa Triangle." I never thought a computer program would help me understand why I am attracted to certain works of art, or that a computer could help me develop a deeper appreciation for one of my favorite artists.

I've saved the best for last. If "Apparent Motion" were the only piece of software on the whole disk, it would still be worth the price. The illusion here produces an effect similar to the "light chaser" on a theatre marquee. It works great on a color monitor (I used a Commodore 1902 with separate luma-chroma inputs), and the effect is positively hypnotic. Even stranger things happened when this demo was displayed on monochrome monitors, effects which author Bresnik probably didn't intend. For example, "Apparent Motion" on a Heath 1220A amber monitor clearly produced alternating patterns of amber and violet (!). Perplexed by this observation, I took the thing to work and booted it up on an Amdek green monitor, where it produced an alternating pattern of green and yellow! Convinced I was hallucinating, I hauled several colleagues into my office for a look, and they also expressed bewilderment at my green monitor displaying yellow. The curious thing about this effect was that it only worked at a certain speed, set by manipulating OPTION and SELECT. No spurious color generation was observed when I ran the program on a Digital VR-201 black and white monitor.

The disk runs under DOS 2.5. I glanced briefly at the code for the two programs, AUDVIS.BAS and OPTILL.BAS. The BASIC code looked clean, loose numbering, and a liberal sprinkling of REM statements. In other words, easy to modify for users so inclined. Overall grade: A-.

Optical Illusions and *Graphic AudioVisualizer* (shareware) requires Atari XL/XE w/minimum 48K RAM and 1050 or XF551 drive $5.95 + $2.00 P&H per order. Bresnik Software, 555 Ware St., Mansfield, MA 02048.

Print Shop Printer Driver

for Epson 24-pin Printers

Review by Ben Poehland

One way I have expanded my computer savvy is to set a new computer improvement goal for myself each year. In 1989 my goal was to improve my word processing capability; I hooked up an XEP-80 to my 800XL, learned the intricacies of *AtariWriter-80*, and topped it off with a fancy new Epson 24-pin printer. In 1990 it was telecommunications; I made substantial investments in 2400-baud modems, interfaces and telecom software, and established myself on GEnie. And this year I'm locked in hand-to-hand combat with hard drives.

Funny things happen when you focus yourself upon some goal you strive to achieve. As if from nowhere, peripheral matters-- stuff you never even dreamed could ever possibly happen--arise that can dampen or destroy the success of your enterprise. Or at least, send you on some wild goose chase that diverts you from your purpose. It's one of the infamous unwritten corollaries to Murphy's Law. I encountered one of these "peripheral matters" the first time I attempted to use my 24-pin printer for something other than word processing.

Epson Printers

The printer I bought was Epson's "Apex" L-1000, successor to the venerable LQ-500 that was discontinued in 1989. The L-1000 is almost identical to the LQ-500 but has a cheaper case, poorer manual, and slightly more sophisticated electronics. My preference for Epson parallel printers began six years ago, when my ignorance of computers was still unbounded. I had an unreasonable fear of parallel interfaces and wanted to be absolutely certain whatever printer I bought would be as compatible as possible with my computer. I had heard horror stories of printers advertised as "Epson-compatible" that failed in some minor way to conform to the Centronics parallel protocol. Since Epson pretty much established the interface standards for parallel printers, I felt Epson was the safest choice for a novice. In 1985 I purchased my first Epson printer, the "Spectrum" LX-80. For five years I cranked out text documents and Print Shop graphics on the LX-80 until early 1990 when I retired it in favor of the 24-pin L-1000.

After I had grown comfortable using the L-1000 to produce text documents, I decided one day to try it with some Print Shop graphics. Naively, I assumed graphics would be printed with 24-pin resolution, and I psyched myself up for a big Wow. *Print Shop* doesn't have a selection for the L-1000 under the printer SETUP menu, but that didn't bother me. There wasn't one for the LX-80, either, but it still worked OK. The very first selection in the SETUP menu is for a kind of generic Epson printer that includes the old MX-, RX-, and FX-series printers. Epson printers today use pretty much the same firmware protocols as those old warhorses, so later model Epsons will work OK when you select Epson in the SETUP menu. My L-1000 responded to *Print Shop* as my LX-80 had, shrieking away as it printed my graphic. Then I looked at the printout, and my Wow quickly faded to a Groan.

Print Shop/Epson Dilemma

There were two things wrong with the print. First, it wasn't 24-pin resolution. *Print Shop* was only addressing 9 of the 24 pins in the head, so my fancy new printer still only gave me 9-pin resolution. Even worse, the aspect ratio was wrong. My graphic was supposed to occupy a normal 8-1/2x11 sheet, but the print occupied all of one page plus the top 20% of the next page! I thought I had done something wrong and wasted a lot of time and paper printing the thing out every different way I could, but the print was always elongated. Apparently, the firmware changes Epson employed to enable 24-pin resolution had produced a slight distortion of the aspect ratio relative to the firmware for their 9-pin printers. I was rather depressed at this *Revolting Development.* I felt my investment in the new printer had improved the appearance of my text output only at the expense of degraded graphics quality. Degraded graphics wasn't supposed to be part of the bargain.

Paging through a timely issue of *ANTIC* (Feb/Mar 1990) I spot-ted an announcement of new 24-pin printer drivers for *Print Shop* from Innovative Concepts. (Len Poggiali had announced the same software in the September 1989 issue of *CN*, but I wasn't a subscriber then.) Posthaste I ordered the Epson driver from Innovative Concepts. Of course, their driver was for the LQ-500/800, so there was a chance it wouldn't work with my printer. I figured for $15 I couldn't go too far wrong. In any event, I had already purchased the manual for the LQ-500 to supplement the pathetic thing that came with my L-1000 and knew

the two printers were practically identical.

Solution: A 24-Pin Driver

The Epson 24-pin Print Shop driver arrived as an unprotected double-sided disk with a two-page printed insert of instructions, programmed by Jim Steinbrecher of Sector One Computers. Side A of the disk is used with *Print Shop* and Side B with *Print Shop Companion.* The instructions were simple and easy to understand. The documentation indicates the driver can be used with any Epson-compatible printer such as the Star NX-2400 or Panasonic 1124, though I didn't verify that.

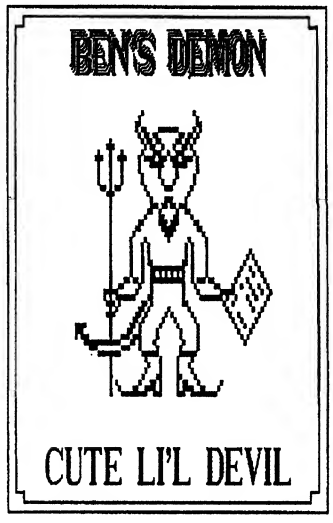


Figure A

Figure B

Figure C

I used a sector copier to prepare a working copy of the disk, and it worked fine with both *Print Shop* and *Print Shop Companion.* The driver is very easy to use. At the main PS menu you highlight SETUP, insert the driver, and press RETURN. The driver loads automatically, giving you a screen message upon completion. There is no printer test routine, and the driver is not saved to your *Print Shop* disk.

Seeing Is Believing

The three figures show a whimsical full-page graphic (reduced for this publication) I made up using *Print Shop* with an icon from BCI's Printer's Devil. Figure A is the printout from the L-1000 using *Print Shop's* built-in Epson driver. Figure B is the same graphic printed on the LX-80. I also printed out Figure B from an ancient FX-80 and also from anApex T-1000 (Epson's newest model 9-pin printer); the printouts from all three 9-pin printers were identical to Figure B. Figure C is the output of the L-1000 using IC's 24-pin driver. The print was much darker, since all the little spaces between the dots had been filled in using 24 pins. Notice also the aspect ratio of Figure C is almost identical to that of B.

Using Figure B as the standard size output for 8-1/2 x 11 paper, the vertical height ratio of A:B:C is 1.21:1.00:0.97. Translation: without the driver your output is 121% (too long); with it, there is a slight compression (3%), but now your graphic fits on the page. In addition, the 24-pin fill adds a certain crispness to the appearance of the page. If my graphic had been printed on a laser printer, it would look much the same as Figure C. A 24-pin printer is really a poor man's laser.

Nothing Is Perfect

There are two things I don't like about Figure C. First, using 24-pin resolution does nothing to improve blocky 8-bit graphics. This is not the fault of the driver but has always been an inherent limitation of *Print Shop* itself. *Print Shop* icons are created pixel by pixel using only about 25% of the screen. Printing out an icon (with *Print Shop Companion*) in its actual size gives a postage-stamp size picture with remarkably good detail even from a 9-pin printer. But blow it up several hundred times to fill a page, and every pixel becomes painfully visible. I wish someone could re-write *Print Shop* to fix this. Sigh.....

My other complaint has to do with the amount of time it took for Figure C to print out. I didn't time it exactly, but it must have been 10 minutes or so (it seemed like ages to me). By comparison, Figures A and B only took a minute or two. While it could be rationalized that triple resolution might take three times longer to calculate, I didn't expect it to be THIS slow. I can only conclude the number crunching involved must be truly horrendous. In fairness to IC, however, I should point out that the built-in 24-pin driver that comes with Hi-Tech Expressions' *AwardWare* program is just as slow, maybe slower. Apparently, it's just the nature of the beast.

The Bottom Line

All things considered, the sacrifice of speed in exchange for a correct aspect ratio and 24-pin fill is something I'm willing to live with. After all, people don't know (or care) that it took you 10 minutes to print the thing out, they only judge the final result. If the program carried a higher price tag, its purchase might be an "iffy" proposition. But at $14.95 I have no reservations about recommending this program to anyone who wants to use his Epson 24-pin printer to crank out out *Print Shop* graphics.

[Innovative Concepts 31172 Shawn Drive Warren MI 48093.]

Chaos Strikes Back!

Lord Chaos Finally Triumphs

Review by Marshall Valc

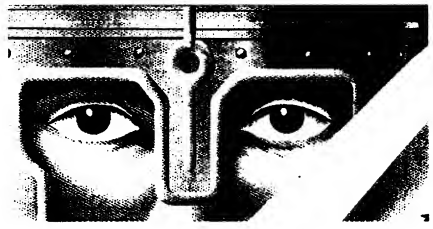
Clamoringfor More

When *Dungeon Master* by FTL appeared several years ago, it breathed new life into an old format. Finally, machines such as the ST had the power to handle a game that nearly mimicked a dungeon adventure as a person would experience it. Yet, as people began to trap Lord Chaos and fuse him with Lord Order to reform the Grey Lord, they clamored for more! So, as the time passed and hardy ST adventurers waited, Lord Chaos gained more and more power. After over a year of waiting, Lord Chaos has finally overtaken the Grey Lord and trapped your adventurers in his old secret dungeon. Thus begins *Chaos Strikes Back!*

Chaos Strikes Back! is actually billed as a *Dungeon Master* expansion set and this describes it perfectly. Although you do not need a copy of *Dungeon Master* to play *Chaos Strikes Back!*, you definitely need the experience acquired from playing *Dungeon Master.* The original CSB manual did not describe how to play the game since it was assumed you would have played and know DM (FTL had plans to change this). You can create a party of adventurers in two ways. One way is to go into a prison with the souls of trapped adventurers and form your party from them as in DM. Included in the prison are two super-characters hidden away, although you can only include one into your party.

Recruiting Your Party

The other way to create your party is to import your old familiar band of adventurers from DM. This is done by the use of a new facility to CSB, the CSB Utility Disk. The CSB Utility Disk has 3 parts to it. The first is a little animated introduction sequence that is quite well done. The other is a character editor. Here you can import your DM characters into a CSB party. You can also edit their portraits and names with an editor. Imagine having a party consisting of the Bloom County characters; well, know you can do it. The editor isn't very powerful but it gets the job done.



The other part to the CSB Utility Disk is the Hint Oracle. When you visit the Hint Oracle, you must insert your party's saved game disk, whereupon the Oracle reads your location in the dungeon. The Oracle will then give you selectable levels of hints. At this point, you are now ready to be literally dropped into a very devious and devilish adventure of the highest caliber. Unlike DM, you do not begin the adventure with ease. CSB immediately drops you into an unlit room, buck-naked, weaponless and with some slightly changed "playmates" from DM. At this point, you will be scrambling to remember what the symbol for a full powered fireball is!

Unique

The dungeon layout of CSB is one of the most unique ever devised. As you recall from what Lord Chaos and the Grey Lord said before you were teleported here, the dungeon has four ways. One way is for each of the attributes of experience, Ros, Ku, Dain, and Neta. This is Lord Chaos's way of mocking your belief in Harmony. In addition, Lord Chaos has forged four pieces of Corbum that he will use to destroy the universe! Corbum sucks in mana from its surroundings and the four pieces are starting to destroy your fair planet.

Your job is to travel the four paths, mastering them in the process, and find the column housing the four Corbum pieces. You will then take the four pieces to the Ful Ya pit, where they were forged, and toss them in, destroying them forever!

You begin nearly in the middle level of the dungeon. From there, you travel to the Junction of the Ways which takes you to the beginning of one of the four ways. Each way takes up a portion of the level but you generally can not travel from one portion to another.

Each of the ways leads to the Diabolical Demon Director. The DDD is much like the half way point. From the DDD you travel through another set of four ways to where the Corbums are stored. Finally, you must take the Corbum up one more level to Ful Ya pit and destroy them. Beware though, Lord Chaos roams around and he's sporting a new outfit!

What makes CSB so unique in the adventure realm is the randomness FTL has included. Most games have items in predetermined locations. In CSB, there are predetermined locations but what items actually appear there is different each time you create a party with the Utility Disk. There is a pool of random items that can be picked from when the game sets up the dungeon. This means that one gamer's party may find some armor early in the game while her friend won't find the same piece till nearly

the end. This helps give the game a fresh look the next time you play it.

Although there aren't any new spells, there are quite a few new monsters. From little flying lobsters to creatures that look like Whoopi Goldberg's hair with an eye in the middle, these new monsters provide some new scenery. Unfortunately, their abilities are generally akin to the creatures in DM. What does prove frightening is the massive numbers of monsters that appear. Places like the Dragon's Den, where really nasty dragons regenerate, strike fear in any hardy adventurer.

An Abundance of Puzzles

Probably the best aspect of CSB is that it has many more puzzles than DM had. These puzzles range from just trying to figure out where you are in the dungeon to figuring out how to travel the "bridge." It's actually quite a refreshing change from your general "hack and slash" as the only way of advancing in the game. Most of the time, you are trying to figure out the latest puzzle to venture further. Often the layout of the dungeon proves to be the most daunting feature. I think CSB has found an excellent balance between puzzles and fighting that should challenge beginner and expert.

A Must Have

I consider CSB to be a very worthwhile purchase. If you have played DM and enjoyed it, then you must have CSB. You need not have finished DM to play CSB. If you have never played either of the games before, then I would suggest you start with DM since CSB relies so much on previous knowledge from it. Don't forget that CSB is billed as an expansion set. The graphics in CSB are just as superb as in DM and with all of the wonderful screams and grunts of DM that scared us out of our seats. *Chaos Strikes Back!* is a must have for any gamer and is a wonderful addition to your software library.

In closing I'd like to say hi to Bill Kelly at FTL. Bill is the sole Amiga programmer for *Chaos Strikes Back!* and I had the pleasure of chatting with him a couple of months ago. Good luck! Also, *Dungeon Master* will soon be released for MS-DOS machines, so, now, if the nights aren't long enough for you to finish it, you can do so at work.

For comments or help you can reach me at: Internet: mjv@brownvm.brown.edu;Bitnet: mjv@brownvm; or Marshall Vale, Box E, Language Lab, Brown University. Providence, RI 02912

Chess Player 2150

When Machine Is Master

Reviewed By George Hulseman

Some Elo Numbers	
Gary Kasparov	2750
Grandmaster	2450
Deep Thought	2445
International Master	2350
Author of CP 2150	2320
Chess Player 2150	2087
Psion Chess	1925
ChessMaster 2000	1693
Average Player	1400
Absolute Beginner	1000

Among the thresholds of progress that man has yet to cross, perhaps none will be more disturbing than the eventual computer chess program that will be able to defeat any human challenger. *Deep Thought*, the current top mainframe, is already just below the abilities of a grandmaster. And now, with the release of *Chess Player 2150*, even a personal computer can make a formidable opponent for all but the best players in the world.

Released in England by Oxford Softworks, *CP 2150* is lauded as the most powerful computer chess program ever developed for the 16-bit computer. It can easily beat any of the existing chess programs for the ST and is packed with enough features to make this a great buy. It runs on both color and monochrome systems with at least 520K. The program disk is not copy-protected, but it requires entering a password from the 16-page manual to get in.

Son of Deep Thought

The author of *2150* isn't kidding when he claims to have written the strongest and most versatile chess program yet. It won first place in the 1989 British Open Personal Computer Chess Championship. The program has a massive 93,000 byte library of opening moves and can actually "learn" by adding moves it considers strong to its opening library.

More importantly, *2150* plays a *mean* game of chess. That, with some outstanding features, makes this *the* best computer chess program out there. Consider this: it is the first and probably the only computer chess program to have achieved candidate master status on the international Elo scale (named after one-time chairman of the United States Chess Federation chairman Arpad E. Elo). *CP 2150* has an estimated rating of 2,087 on this scale. The next best chess program, *Psion Chess*, is an estimated 1,925 on the same scale, while an average chess player plays a 1,400. *Deep Thought*, by comparison, is a 2,445.

What all these numbers mean is that it can beat the pants off your average chess player. *CP 2150* was pitted against some of the leading chess programs during development and it soundly beat them in most of the games played. As proof of the program's expertise, the author includes 30 of these games on the program disk. But I needed no proof. I used to consider myself a respectable chess player until I played *CP 2150*.

What's In A Game

The real potential of chess on a personal computer, I think, is realized by *2150*. It allows you to fine tune the program to match your playing level (I keep tuning it down, down, down). A special range of 10 easy levels is available for the beginner, from **orangutan** to **gorilla**, or, if you like humiliation, choose from the advanced levels.

On the **strong opponent** level you choose the computer's response time as well as select one of four basic play modes to determine how the computer metes out its specified playing time.

The strongest level is **tournament** in which the program averages its time spent per move according to the time it has spent so far in the game. Thus, if the computer utilizes its time well during the opening moves it will have more time later in the game. In **average** mode the computer tries to stick to the selected move time for every move. In **matching** mode the computer spends roughly the time that you spend on any given move. And in **infinite** mode, the computer thinks until you select MOVE NOW from the pull-down menu.

One of the main strengths of the program is its ability to "think" on your time. In other words, while you're thinking about your next move, the computer is thinking about its next move. Therefore, it's detrimental to your game to take a long time to think.

Other standard chess program features are also included. You can take back moves, save games, print game moves, ask the computer for a hint, watch the computer play itself, change sides at any time, and change the color of the playing pieces. Or play a friend using the program in supervisor mode.

As in the classic eight-bit *Sargon III*, which I've always used as the standard for all other chess programs, *CP 2150* allows you to switch from the game board to an informational screen display that shows the list of game moves, or you can look in on the window of

search to see what the computer is contemplating for its next move. The computer also displays the current "score" of the game, whom the computer believes is winning and by how much.

Do You Dare

Another unique feature of 2150 is a test routine that provides an estimate of your own Elo rating based on your responses to a series of 24 chess situations. This function is supposed to be accurate within 50+/– Elo points. It's sort of an IQ test for chess players.

Sound and Graphics

Although you can select from two–dimensional or three–dimensional displays, only the two–dimensional mode is really usable. This is true for all chess programs I've seen. Three–dimension simply doesn't work because you get a distorted depth–of–field and a blending together of pieces.

That doesn't really matter because the two–dimensional display works fine. With either display you can flip the board so that your pieces are on the bottom, top, right, or left. And you can change the colors of the pieces and the background to suit your tastes.

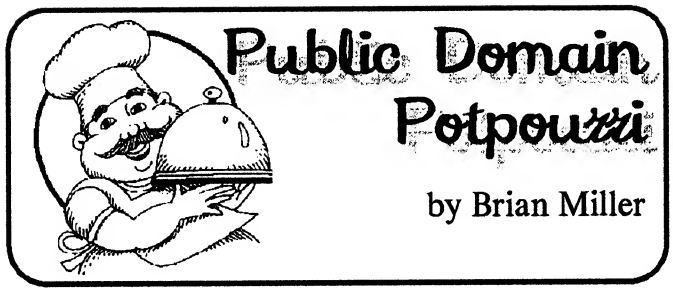
A digitized voice lets you know when it's "your move" or if there is a "check" situation. If one of your pieces is captured the computer tells you (in a rather cocky voice): "I got you" or in a reverse situation (in a humble voice): "you got me."

Check and Mate

I could go on about the merits of *2150*. It's not a perfect program; the interface has some minor quirks. For instance, the computer fails to "remember" you're playing black if you load a saved game in which you were playing black. This is easily rectified by selecting SWAP SIDES from the menu. Overall, it's a very strong chess program and has all the features you expect plus a few more.

While this may be the strongest program around, it won't be long before other better chess programs come along to top it. We are already nearing the time that a main–frame will be able to beat any human player. World Champion Gary Kasparov, who is currently defending his title against arch–rival Anatoly Karpov, recently predicted that he is the "last human champion," as he expects computer programs that can beat even the grandmasters to emerge by the end of the decade.

By the looks of *Chess Player 2150*, he is right.



Blame It on Sadaam

I have been trying to think how best to explain my failure to complete an article for last month's edition of *Current Notes*. I couldn't very well tell you that I was too ill to write. The 24 hour bug that I had mentioned last time was that and no more. It is true that my children have had more than their share of sickness this Winter, but that in itself is not adequate to explain how January rolled into February without my writing a single word. Perhaps the great deal of pressure I am under at work would serve as a more plausible excuse, but I could claim that any month.

In truth I have no one to blame but Sadaam Hussein. (Forgive the rhyme and my inability to put the blame on my own shoulders, but how often do we have a convenient world villain to dump on anyway?) Since early January when Congress debated whether to approve the use of force to remove this tyrant's army from Kuwait, I have been held hostage, or guest if you prefer Sadaam's terminology, by these world events.

As the crisis escalated, I had been able to remove my stare from the TV tube for diminishing periods of time. We have four television sets in my household, enabling me to get the ABC, CBS, NBC and CNN perspectives on the progress being made in the war simultaneously. Since the conflict began, I just haven't felt right going to bed without watching both Gulf Talk and Night Line. Our bedroom TV has replaced our night light. I have felt more secure leaving the set on after coming to bed, just in case anything significant would occur in the wee hours of the morning.

As of this writing a temporary cessation of hostilities has been declared. I fervently share the hope with all other Americans that by the time you read this, the terms for a lasting peace will have been worked out. Meanwhile, I will have to continue my struggle towards recovery from a pervasive addiction to the media coverage of the war. I am delighted to report that while I felt compelled to watch the MacNeil/Lehrer Hour last evening, I was able to miss Bernard Shaw and Larry King without undue ill effect. It is now 8:14 a.m., and I have started in on this article without first checking the status of world events. It has been an effort, since I am mildly anxious, but, in time, this unease may decrease.

A Plea to Fellow Enthusiasts

By far my biggest concern in writing this column is that I want to make sure that the software I tell you about is of interest to you. I typically end this column with an invitation to readers to send good examples of Public Domain or Shareware software. I would like to reiterate and emphasize that request; consider it a plea. With the thousands of subscribers to *Current Notes*, I am sure that many of you have found, or perhaps written, some utility or other program that your fellow ST enthusiasts would love to learn about.

I have no doubt about the potential worth of Shareware programs. In the IBM world, *ProComm*, *PC File*, and *Auto Menu* have enjoyed such success over the years that these heretofore shareware programs can now be directly marketed as commercial software. A few ST authors have enjoyed comparable fame. *Quick ST* in its earlier versions is still available on many Bulletin Boards. This screen accelerator has dazzled literally thousands of ST users. It is now marketed as the commercial software program, *Quick ST II*.

Please put on your "thinking caps," rummage through your library of diskettes to find programs you think have appeal to other users, and send these gems to: Brian Miller, 13848 Delaney Road, Woodbridge, VA. 22193 (703) 590-3165.

I know I am asking a lot. It will cost you postage and a perfectly good diskette. However, the potential benefit to the ST community is great. Mr. Waters has been gracious in his willingness to add the submissions I have received so far to the Current Notes Library. If we as users pay the registration fee or in some other fashion communicate our positive feelings about a software program, an author may derive the feedback necessary to continue efforts to improve the quality of his or her work. In some cases, the author may gain sufficient confidence to take the plunge and market the program commercially.

Short of that, the author may be encouraged to work towards the further development of that and perhaps other software programs. Though we now read about IBMs or the Atari TT computer that speed along at 32 MHz, what does that really matter without good software? So far, I have been quite satisfied trudging along at 8 MHz, as long as I have had quality programs to run with my ST.

The Nature of Shareware and Public Domain Software

The universe of shareware and public domain software is expansive. Some programs offer the user an alternative to commercial products. Take *ST Writer*, for instance, written by Dr. Bruce Noonan. This word processing program has been available almost from the introduction of the ST. Now at version 3.8, unless that changes by the time you read this, *ST*

Writer keeps getting better. It offers full word processing capability and is a favorite of many ST users. There are many fine examples of public domain and shareware software that offer completely adequate and, in some cases, perhaps superior, capability to more expensive commercial programs.

For example, our office uses *Lotus 1-2-3* version 2.2. This spreadsheet program retails at over $350.00 dollars. While I have not been able to try out *Sheet 3.2* for the Atari, I have used the shareware program *As Easy As* which works under DOS for IBM compatibles. *As Easy As* offers most of the features of *Lotus.* Since it uses the same key stroke commands as its commercial equivalent. I have not had to invest start-up time to learn how to use a new program. *As Easy As* allows you to import and export database .dbf files from within the program itself. In contrast, *Lotus 1-2-3* forces you to import and export most files through a separate translation program. I have been able to convert worksheet files to *dBASE* files much more easily and reliably with *As Easy As* than I have with *Lotus 1-2-3.*

While some shareware and public domain programs effectively compete with commercial programs to please a broad audience, others fill a specialized niche that commercial software houses may consider too small to be profitable. However, for those few who have a similar need, these programs can be quite valuable.

For example, ST owners who employ their computer exclusively for their home use might see little value in the ability to share files with MS-DOS machines. In contrast, those of us who take work home find this capability quite necessary. Earlier versions of TOS did not format diskettes in such a way that they could be read on IBM computers. Double Click's *DC Formatter* program remedied this problem by writing the necessary boot sector while it formatted diskettes. Thanks to this program, diskettes and the data they contained could be easily swapped between MS-DOS and ST computers.

Data conversion utilities are examples of programs which have high appeal to a potentially smaller group of users. Most word processing programs insert their own control codes to bold, underline or otherwise determine the look of the document created. If you go to the trouble to carefully format your work, wouldn't it be nice to be able to share the finished product with someone else if you had to? But what if you used an ST word processor but needed to share your work with a PC user? Without a conversion program, you would be limited to sharing the ASCII or text file. Your PC buddy would be left to re-polish the document all over again.

A long while ago, I stumbled upon a program called *1st Convert.* Its purpose was to transform ASCII, *WordStar,* or *ST Writer* documents to *First Word* format. With this program I could work on a document at work, save it to *WordStar* format, and finish it at home using *First Word.* While a utility akin to Bruce Noonan's Sift program which would convert to and from various formats, would have been nicer, *1st Convert* provided at least some portability between the DOS and ST world.

Until I needed to bring work home, conversion utilities had little appeal. However, the dividing line between home and the office occasionally blurs. When it does, the worth of these utility programs becomes painfully obvious.

While word processing, data base, spreadsheet, spelling checkers, and a host of other shareware programs would be certain hits with most users, that specialized utility you wrote or found may, in fact, represent salvation to at least a few of your ST compatriots.

Until Next Time

While I would never boast that I would not have problems meeting next month's deadline, I at least have in mind a couple of programs I would like to tell you about already. That's a real plus for me. I also plan to pose a question to the *Current Notes* readership based on a letter I received about one of the programs I presented some months ago. Until next time, take care!

Mac No More

by Richard H. Keene

Recently, there has been some commotion about the fact that Atari users are "leaving the Atari arena in droves." I hear reasons from users like, "my ST is out of date," "the new Mega STe and TT are incompatible with some of my current software," "if the TT is so great, why does it only use 250 colors from a palette of 4,096," and "too little too late."

Then to add fuel to the fire, one enlightened developer (read: sour grapes), writes a series of articles on how to buy a PC that was published in a popular on-line magazine. To me, a lot of his credibility was flushed when he ended his series by stating that the ST was and always will be just a game machine. Hmmm. Then I wonder why his series of utilities wasn't written for a game machine. Ever try laying out a newsletter or creating something in CAD with a Nintendo? Actually, his article convinced me not to buy a clone, but that could fill another column.

Maybe a lot of the furor was because people who spend time downloading ST magazines don't like being told their computer purchase was the wrong decision. Personally, I like to read about other computers and software. It helps keep things in perspective. I admire that on-line magazine for publishing those articles and the letters they generated. Hopefully they will continue to have the courage to stir things up. It's good for the soul.

While this has been happening, there have been personnel changes in Sunnyvale. We were told for months that something wonderful was going to happen only to have it come and go in a wink of an eye. Again we read of another restructuring. We'll wait and see.

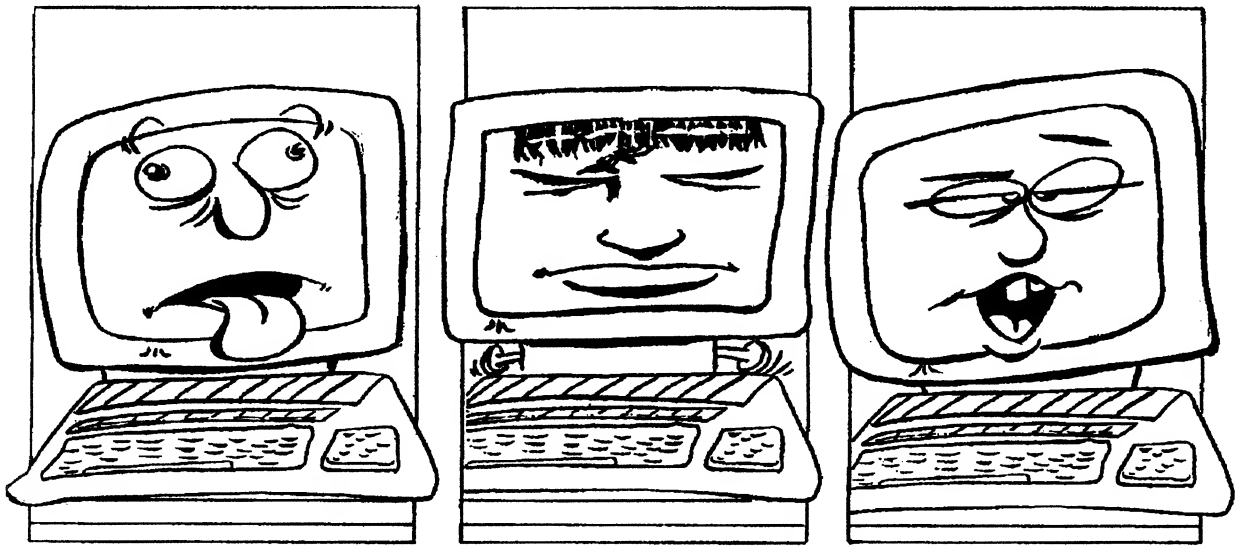
In all fairness to the users who have left the Atari arena, dealers are sparse and the mythical "year of Atari" has yet to happen. It's pretty hard for those of us left to recommend the machine. But not because it's "just a game machine" or "its capabilities are limited." Nothing could be further from the truth. Those of us who put our systems to good use know how versatile they are. I don't look at users of other computers with envy. As a graphic artist, my ST works for me and works well. And so it is with great anticipation I await to see what the future holds for Atari with the release of their new machines.

I guess that's what distinguishes Atari users from other computer users. We're a loyal bunch. True, a good number have left the ST for other platforms, but there are still quite a few hanging in there. At least the view from my mountain looks like that. (Incidentally, a couple of professionals I know were in the market for a computer that they could use in business and graphics. They looked at what was out there and they bought the latest from Atari.)

For those of you out there who know people who own Macs or IBM/clones, you may want to ask them what they think of the parent company. Can they name the chief executives at Apple? Are they aware of what IBM has proposed for new marketing? If they are new owners, have they heard of the upward compatibility problems that long-time owners have had? Maybe, maybe not. Ask the same questions to an Atari user and be prepared for a lengthy dissertation.

Okay. You've read most of the above in a variety of other places. Do you still feel good that you own an Atari? You have to ask yourself that question. I do every day. Why? Because I make my living daily using an ST. I bought it as a 520ST five years ago. At that time, I also owned a MacPlus with hard drive, Laserwriter laser printer, Imagewriter dot matrix printer, Thunderscan scanner and software. A little later, I considered selling my ST and keeping just the Mac. I thought it would be easier buying peripherals and upgrades for one computer. I was half right.

The Magic Sac came about and I considered buying that for my ST. I didn't because, well after all, I already owned a top-of-the-



line Mac, right? I felt that the ST was good for creating color paint files while the MacPlus could only handle *MacPaint*. I remember a writer for one of the Mac magazines back then trying to justify the monochrome display of the Mac. He reported that a child was painting in *MacPaint* and was referring to one of the fill patterns as the color blue. To him it was blue. I guess the thinking was that color is a state-of-mind. If you can paint without color, then you can certainly do business applications without color. Practically unnecessary. Today, walk into a company that uses Macs. If they do, chances are good that even the bean counters have a color display on their Mac II.

Today, my MacPlus is gone. I sold it along with the Imagewriter and Laserwriter. (Thunderscan is still sitting in my drawer with the software. Call or write if you're interested.) My 520 ST now boasts four megabytes. The 20-meg hard drive grew to 140 megs. The Laserwriter was replaced with the SLM804. Thunderscan has been replaced with Migraph's Hand Scanner and *Touch-Up*.

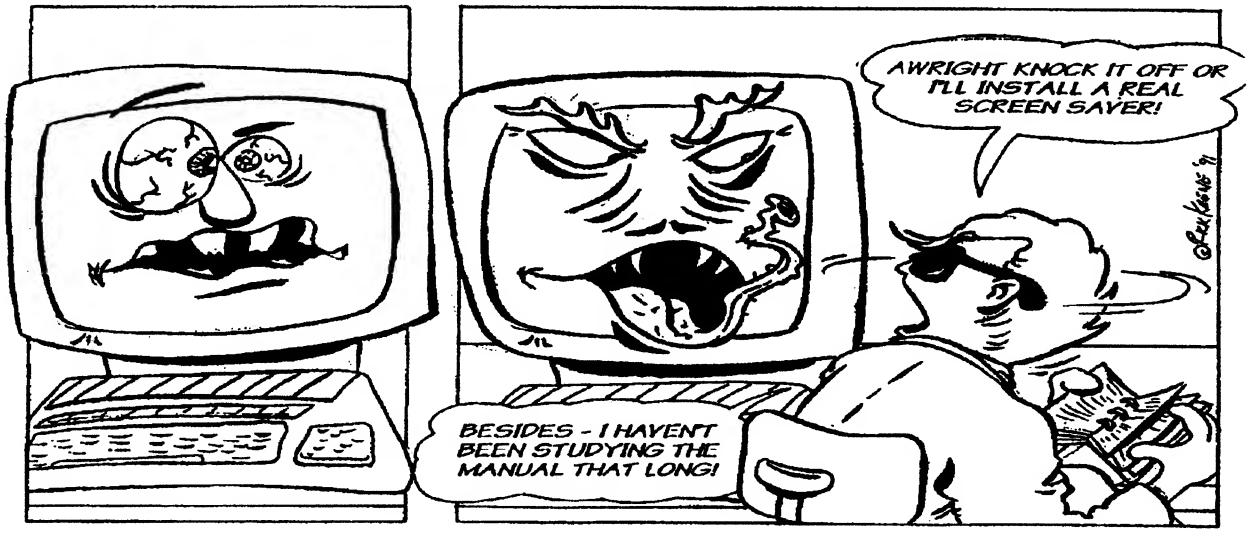
The idea of keeping one machine to upgrade was a good one. It's just that I almost sold the wrong machine. We have Dave Small and his team of sorcerers to thank for creating a strong product with Spectre GCR. It's bullet proof and that's how I stay Mac compatible with the clients I have who need work done on the Mac. Anything I create or scan on the ST can be sent over to the Spectre. My colleagues who also had a MacPlus graduated to the SE. Then again to the Mac II. Now they're busy adding upgrades to the Mac IIs to be compatible with the latest batch of Mac IIs.

The ST has kept me compatible with people who have Macs. That usually means desktop publishing. But there's a fair amount of desktop publishing that I do on the ST end especially if it doesn't matter what machine it's created on. Having owned and used a Mac, I prefer the ST. If there's something I need that isn't available (like *Streamline*) then I pop over to Spectre, and then back to the ST. It's amazing how many kinds of files can go back and forth.

The graphics that I create aren't limited to logos, illustrations and DTP, however. I worked for a year with a company that created a computer game for the IBM. (Amiga and ST conversions followed.) I could work at home on my ST creating certain elements for a battle scene or background. It was easy to hand draw the positions for animation and then scan them into the ST. I would then bring the disk back to work and load the files into the IBM where I would use the color palette being used in the game to finish the job.

My ST is only now starting to show some age. Not bad for five years. I suspect there may be a Mega STe or even a TT in my future. And I realize there will be some software compatibility problems. But to me, it makes more sense to replace a few pieces of software than to replace an entire library of software for a new machine. Especially at the prices of Mac software. And what if there is very little software for this STe/TT? I believe that my ST software will carry me through for awhile not to mention Mac and IBM software. And the peripherals I have will still work with it so I'm still saving more than if I bought a whole 'nuther cheaper machine.

As far as Atari the company is concerned, I'm still hoping for the "year" to happen. I would like to see more dealers and visibility for their line of computers. I would like to have seen more usable colors for the STe line than 16. I realize there are shortcomings I would like to see changed. However, the ST still works for me now. I haven't found a better solution after five years. If you're thinking of buying another type of computer but your ST is still plugging away for you, then ask yourself what the other computers offer that your ST doesn't. If you need a zillion colors for your spreadsheet, then think again. You could be paying for more than just a computer.



Current Notes ST Library

July–August 1990

#460D: DYNACADD DEMO-(M) V1.76. CADD package, (no SAVE or EXPORT) comes with font editor program and several utilities. Req 1MB, DS.

#461: CALAMUS OUTLINE ART DEMO--(M) Working demo (no SAVE) to this companion program to Calamus. Req 1MB, DS.

#462: BLOODWYCH DEMO--(C) Fully-playable "Dungeon Master" game.

#463: BLOOD MONEY DEMO and WIPEOUT--(C) BLOOD MONEY, horizontally-scrolling shoot-'em up. WIPEOUT demo, Intergalactic Hoverboard Challenge.

#464: PERSONAL FINANCE--Payroll (V3.0). Cost of Living Adjuster, Checkbook V1.14, and Personal Finance Manager demo.

#465D: MAIL PRO & STOCKS AND BONDS--(M) Mail Pro Demo: filing and mail-merge system, demo ver offers limited entries. Req 1MB. Stocks and Bonds is a based on the fast action stock market game.

#466: 16-VOICE SEQUENCER--features multi-voice recording, split keyboards and/or velocity ranges, simple editing.

#467: MIDI MUSIC MAKER-music player for Music Studio 88, Music Construction Set, EZ-Track and many other formats.#469: PAGESTREAM FONT EDITOR--The official font editor from Soft-Logik.

#470: CLIP ART#14--People, in variety of everyday situations-Degas format.

#471: CLIP ART#15--More People in Degas format pics. DSLIDE included.

#472: INSTANT GRAPHICS! V2.14--communicate over modem in color, sound, and motion.

#473: INSTANT GRAPHICS! UTILITIES--editing and graphics creation utility, in-depth tutorial, and utility to convert MS files to IG format for playing songs over your modem.

#474: MINITERM and MINIBBS--Miniterm is a full-featured desk acc. Minibbs is a full-featured operational BBS.

#475: HYPERSCREEN and STDCAT V4.3--Hyperscreen, implimentation of the Hypertext concept on the ST. STDCAT, disk cataloger program.

#476: ME FIRST--(C) V2.0. Interactive learning games/stories for children. Includes documentation and additional DATA files.

#477: CLASS and EZ-GRADE--CLASS V2.05, combination database and spreadsheet for teachers. EZ-Grade, demo of a commercial gradebook program.

#478: SPACEWARS--(C) Version 1.0, new outer space shoot-em up game.

#479: HERO IID--DEMO of HERO II gaming system incl Dungeon Construction Set to create and manipulate dungeons for the HERO II game system.

September 1990

#480D: CN ST LIBRARY CATALOG--catalog of the 500+ disks in the CN PD Library.

#481D: CN MACINTOSH COLLECTION-complete text of the Magic Sac/Spectre columns published in CN from 3/87 - 7/90.

#482D: WALLACE NO.1--Cyber Animations: Dr.Who and Who-K9. 6 NEO pics.

#483D: WALLACE NO.2--Cyber Animation: Albatros. plus 6 NEO and 5 PI1 pics).

#484D: WALLACE NO.3--Cyber Animations: Mad_Max and Megafugi. Marsch.spc, animate4.prg, and spslide.prg.

#485: ALGEBRA I: Linear Equations-tutorial leading user into correct equation solving techniques.

#486: ALGEBRA I: Verbal Problems-Covers 10 of the most common verbal type problems found in Albebra I textbooks.

#487: BASIC MATH SKILLS: Operations--pick adding, subtracting, multiplying, dividing, or a mixture of all four. Includes two different arcade type learning games.

#488: GIST (Grades, Interims, Student Teams)--grades management program.

#489: DO NOT STAMP UTILITIES--Area Code Locator; Postal.prg, state abbreviations and spellings; SHREDR V1.1, permanently shred data from your disk; Hot!Stat V1.1, analyze ledger files created by HotWire.

#490: THE VIRUS DISK--The Virus Killer, Ver 3.11, detect and eliminate viruses from your disks; Hospital, set of anti-virus utilities; Super Virus Killer; Flu, displays symptoms of viral infections.

#491: WILD FLOWERS--16 stunning pictures of Wisconsin wild flowers in PC1 format.

#492: UTILITY NO.44--FastCopy III! (program and accessory); HyperFormat, format 927K on 83-track DS disk. ARC Ver 6.02, latest version of ARC compression utility, runs roughly twice as fast as earlier Ver 5.21.

#493D: B/STAT--V2.36 of graphing and statistical analysis program. Req 1 MB, DS.

#494: TAIPAN II/GFA SHELL PLUS--Taipan II game, V1.1: early 1800s trade as you engage in combat with enemy ships.(C) GFA Shell Plus: replacement for the GFA Menux program.

October 1990

#495: TESTMASTER.Ver 2.01, (C/M) Set up your own tests to help prepare for exams.

#496D: GUITARIST DEMO. A tool to help guitarists learn chords and scales in all keys and all positions of the fretboard.

#497D: PUBLIC PAINTER V0.1 (Mono) Latest version of this popular paint program from Germany. Inclues English docs.

#498D: EQUINOX SOUNDTRACKER V2.5 Includes 5 songs: tar concert in air, dns, demons soundtrack, rsi rise up, and wild.

#499: STARBLADE DEMO. (C) Space-opera set in the 30th Century in the vastness of the Orion galaxy.

#500: YOLANDA and RICK DANGEROUS. (C) Demos. Yolanda is an arcade/adventure game. Rick Dangerous, explorer, captured by the Goolu tribe, must escape.

#501: PHOTON STORM.(C) Demo version of this fast-paced space arcade game.

#502: GLOVES/FUTURE(C) Demo versions of Kid Gloves and Back to the Future.

#503: NEODESK 3 AND CLI DEMOs. Demo of NeoDesk 3, replacement desktop. NeoDesk CLI is a window-based command line interpreter that hooks into NeoDesk itself.

#504: KID GAMES.(C) KV_Match: Flip over squares to match baby and parent animals. Letter Hunt: learn alphabet by matching letters on the screen. Enchanged Forest: a variant of both 'Shutes and Ladders' and 'Candyland' suitable for children 3 and above. KV_Geo-1, Hypertext geography, learn about the solar system. Shareware.

#505D: TALESPIN ADVENTURES.(C) SDI, Mansion, and Mountain. SDI.TAL (created by 10 children in the 2nd-5th grades), MOUNTAIN.TAL was designed by 8 3rd-5th graders.

#506: UTILITY NO. 45. TLC-Play, play any digitized sound fmt file; TLC-namr, add symbols to file name; tlc-form, format disk to read/write fast; TLC-attr, change file attributes; mouse_db, new mouse doubler V3; spirited, text ed desk acc; a1-time, time & date setter; clock_5, all rez clock acc; maccel3, Atari Mouse Accelerator 3; ocultarx, hard disk password protection; idle_22, idle screen saver;unlzh172, fastest extract for LZH archives; volume, rename disk vol; ST Sentry V5.1.

#507: TADS. Text Adventure Development System. Includes Ditch Day Drifter adv game.

#508: DEEP SPACE DRIFTER. A Text adventure game created with TADS.

#509D: GENIE FILES 9/90. Archive of files found in the 31 GEnie libraries as of Sep 1, 1990. Files also listed in numerical order from 10,000 through 16,500.

November 1990

#510D: BULLETIN BOARD SYSTEMS. Two shareware bulletin board systems: Nite Lite BBS and Vulcan Embassy BBS.

#511: MIDI MUSIC DISK. MidiMike Version 1.0, Music Studio Song Player 1.2, and MSPlayer by Walter Holding.

#512: SORRY & ST SQUARE. (C). Sorry is the same as the popular board game of the same name. ST Squares is based on the Hollywood Squares game show.

#513: DISENCHANTED. An interactive fantasy game.

#514: PILEUP V3.1. (C) latest version of this Tetris clone is compatible with TOS 1.4.

December 1990

#515D: STARTING BLOCK. A collection of columns by Richard Gunter directed at the novice. Also includes other CN tutorial articles including a series on hard drives.

#516: STARGATE V3.0. Look out your spaceship and see the stars around you.

#517D: ALADDIN. GEnie Atari ST Aladdin,

an automatic communications tool designed to provide you with the most efficient use of the features and services of GEnie.

#518: UNION DEMO. A spectacular demo for the ST showing off many of the animation and sound capabilities of the ST. (C)

#519D: PRINTER UTILITIES. AW-Print, a generic printer utility that let's you define the characteristics of any printer and send codes via GEM drop-down menus. Also includes two 24-pin printer screen dump utilities (SCDMP1_5 and SCRDMP24), and specific printer setup utilities for the Panasonic KX-P1091i (PANASET), the STAR NB 24-10, (STARNB24), and Gemini 10x (GEMINI).

#520D: AIR WARRIOR, V2.0B. Latest update to this air simulation game. Game can be played in isolation to practice, but is designed for interactive combat on GEnie.

#521D: CLIP ART NO. 16. "Old Cars," 28 IMG files of a variety of antique cars.

#522D: CLIP ART NO. 17. "Cartoons," 55 IMG files. 10 pictures of Garfield, 13 Smurf pics, and 32 other cartoon characters.

#523D: CLIP ART NO. 18. "Misc Themes," 49 IMG files: 6 Egyptian pictures, 29 Music pictures, and 14 Zodiac pics.

#524D: CLIP ART NO. 19. "High Res Pictures," a collection of 24 fine art pictures in an IMG clip-art format.

#525D: GRAN PRIX. An auto racing arcade game with dozens of various courses. (C).

#526D: eSTeem PILOT Demo (1.0). PILOT is the classic, educational authoring language, richly enhanced by GEM, for creating and using tutorials, computer-based instruction, and laser videodisc training.

#527D: NAME THAT TUNE & ALCHIMIE. Alchimie Jr is a music sequencer for use with MIDI. Name That Tune is a fun game that lets you match your skills with an opponent to see who is better at recognizing songs. Use with the song data disks listed below.

#528: NAME THAT TUNE MISC SONGS. 111 songs for use with the "Name That Tune" game on #527.

#529D: NAME THAT TUNE TV SONGS. 111 themes from various TV shows. Use with CN #527.

#530: CINEMA & FLASHCARD. Cinema allows young kids to run and create simple animation sequences. Flashcards is just like the name suggests. The author used it to help learn a foreign language.

#531: UTILITY NO. 46. **Quick ST 2.2** Demo, speed up your ST! **Little Green Selector** V1.88--newest version of this alternative file selector routine. The **Gram Slam Grammar Checker** Demo--at last, a way to check your grammar!

#532: VALGUS & MANIAC MINER. (C) Valgus V2.0 is a GREAT 2-player version of a Tetris-clone game. Maniac Miner--go exploring for underground treasures but watch out for rockslides and other obstacles.

February 1991

#533: ST GAMES. (C) **Collapse** V1.1, Blocks fall in groups of 3. The object is to line up 3 or more of the same type in horizontal, vertical or diagonal rows. **Jeopardy**, test your knowledge just like a contestant on the real show. **Valgus^2** V2.0 (pronounced "Valgus SQuared,") In VSQ, the 7 familiar Valgus pieces are back, but they come at you from all 4 sides of the 27x27 playing area. **Tripple Yahtzee,** V2.0, popular dice game provides hours of enjoyment for one or more players.

#534D: HACMAN II. (C) This Pacman clone has all digitized sound effects plus several new "features": 100 new levels, 4 new ghosts, Cameo appearances by many other creatures, Puzzle boards, Skips (skip a board you hate by pressing the space bar), Ghost hit/miss statistics, Secret warps, and a surprise or two for the really devoted.

#535: KIDMIXUP PLUS. (C) The "plus" is that you can now add your own sequence files created with any DEGAS-compatible paint program. 3 picture files (a total of 27 sequence themes) are included with this program. Child chooses a sequence theme from the picture icons. 4 pictures appear. The child clicks on each in turn to place them at the bottom of the screen in the correct order.

#536D: FIVE KID PROGRAMS. (C) **Rabbit,** a rabbit bounces off the back of a fox in order to reach carrots floating by in the sky. **Santawrk**, Santa Claus is grasping for Christmas decorations while angels try to keep a trampoline under him. **Burger**, Ronald McDonald attempts to grab burgers as they float by in the sky. **Circus**, a 2-player math game with adjustable level of challenge. **Robin**, control mother robin as she eats flies and gathers her children from various nests. These programs for kids 3 and up.

#537: PERFECT MATCH, KV-FONIC, and MAKIN' AIKEN. (C) **Perfect Match**, shareware version of program originally distributed by Michtron. Match cards to demonstrate your knowledge. **KV_FONIC** introduces children to phonics. It includes 9 pouzzles containing consonants (b,c,d...), blends (sl, sn, sm...) and digraphs (th,sh...). You can easily create your own puzzles or modify the existing ones. In **Makin' Aiken**, kids put together a little man by choosing the various heads, hands, feet, etc, all to the tune of a cute little song.

#538D: CALAMUS FONTS #2. Advertising, Architect, Barnum, Casual, Celtic, Chrome, Flash, Harloe, Mouse, Schoolbook, Western, Tiphany, Fancy Chancery, Windzor, University Roman and University Bold, Broadway Engraved, St Francis, and SHOWFONT.CDK (produces a nice display of any Calamus compatible font.)

#539D: ARCADE DEMO DISK. (C) Toyota Rally, Flimbo's Quest, and Defender II.

NOTE: Due to the recent postal rate increase we have had to change our shipping and handling charge from $1 for 6 disks to **$1 for every 4 disks**.

CURRENT NOTES CARTRIDGES

The CN library is also available on **Syquest 44MB** removable cartridges. Each cartridge holds approximately 100 disks of Public Domain and Shareware-software.

Cart 1: 112 Disks
#347 – #469

These include all the disks introduced by Current Notes from July of 1989 through June of 1990.

Cart 2: 80 Disks
The Spectre Collection

Includes 80 disks of Macintosh software, in Spectre format (#S01 – #S80), plus the complete text of all CN Magic Sac and Spectre columns from 3/87 through 6/90.

*** * * ANNOUNCING * * ***
Cart 3: 90 Disks
#470 – #559

Our third cartridge is now ready. It includes all the disks introduced by CN from July of 1990 through April 1991, every disk you see advertised on pages 74–76 is on this cartridge (plus a few more you don't see yet.)

$119.95 each

(+$4 Shipping & Handling)

NOTE: If you own an **ICD FA-ST Tape Drive**, ***both CART 1 and CART 3*** are available on a single Data Cassette tape for the price of a single cartridge, $119.95.

You may also order Andrzej Wrotniak's programs through Current Notes:

STAR BASE, $43.

EL CAL 1.3, $44. (Both programs for $80.)

All Current Notes disks are only $4.00 each (add $1 / every **4 disks** for S&H up to a maximum of $6.00). 10 disks for $35.

CN disks are guaranteed to work. If you ever encounter a problem, simply return the disk and we will gladly replace it. Note that a "D" after a disk number indicates a double-sided disk.

Order disks from CN Library, 122 N. Johnson Rd, Sterling, VA 22170. VISA and MC orders are welcome (703) 450-4761.

March, 1991

#540D: ARCADE DEMOS. Simulcra: arcade-type UK game **Spellbound:** Psygnosis platform/collecting type game. **9 Lives:** ARC Software platform type game (Color)

#541D: GOD'S WORD^2 DEMO. Bible reading program God's Word ^2 for Medium or High resolution. There are six books supplied with this demo, and an abbreviated topical reference index.

#542D: KID GAMES: WUZZLERS and REBUS WRITER. Wuzzlers is a word and picture puzzle game. Rebus Writer allows the user to design and print rebuses, a kind of code in which pictures and symbols are used to represent words.

#543D: MIDI MAZE II. MIDI Maze II version 1.5 from Germany runs in color or high rez. 16 ST's can interconnect via MIDI port or a single player can give it a shot. Doc's in German.

#544D: PERSONAL MUSIC LIBRARIAN. Demo of PML, the comprehensive music cataloging system, restricted to 35 recordings or 60 songs in the database. Req1 Meg RAM.

#545: CARDFILE, NOTES, MUSICALC. CardFile 1.43 demo version limited to ten address cards and ten appointments, but is otherwise fully functional. **Notes v0.9** (shareware) allows you to keep the equivalent of those little yellow stick-on note papers within your computer. **Musicalc v2.02**, In addition to normal numeric calculations, will preform time base and footage calculations. The most unique feature however is its ability to calculate bar (or beat), SMPTE time, and footage offsets referenced to a starting SMPTE time..

#546D: TCB TRACKER DEMO. TCB Tracker, offically named the best music program of 1990 in Europe, is a four track music record and playback system that includes a drum machine, sequencer, and synthesizer all built in. In essence, it's a complete mixing studio.

#547D: KID GAMES: 7KIDS and BARNIMALS. The Wolf and the Seven Kids is a first adventure for young computer users, ages 5-9, based on the Grimms' fairy tale, with several possible endings to the story, depending on what choices you make, and there are numerous opportunities for making choices. **Barnimals** is a listening/guessing game for the very youngest computer users, ages 0-4.

#548: UTILITY DISK NO. 47. BACKUPST: hard disk backup utility. **KTEXT133**: K_Text version 1.33 allows viewing of Degas or Pixel perfect pictures. **STEXT11**: fast text reader for the ST. **PFXPAK**: A German runtime packer that will LZH your executable files and put a bit of SFX code at the beginning. When you cliick on a program, it will first extract itself, then run. **LIBMASTR**: organize, modify, convert, and print your Print Master Libraries. **TEXTVIEW**: a GEM-based text file viewer with all functions controllable by the mouse. **TX2_VIEW**: Demo of text reading program, version 1.35. **PINHEAD**, drastically reduces the amount of time it takes to boot your computer and load and run programs. **BIGCOLOR**: V1.05 is for use with Mono monitors, and allows some low resolution and most medium resolution programs to be run on a Mono monitor. **SANDP21**: ver 2.1 allows you to make your own electronic newsletter by formating the text output in the window with different fonts and colors. **FB2**: First Base (ver 1.7) Database is a fast memory resident database system for small and medium size applications.

#549D: UTILITY DISK NO. 48. A2LSWTCH Allows you to switch back and forth between the ARC and LHARC compression methods. **ARCSHL23**: ARC Shell V2.3 is a GEM program, designed to work with ARC.TTP, that adds a GEM interface letting you point and click to select the various options instead of typing a command line. **UNLZH**: v1.61 combines GEM interface with high speed extraction routines to give you a simpler and faster way to extract LZH archives. **ARC602ST**: ARC File Archive Utility, V6.02 creates and maintains file archives with compressed files that take up a minimum amount of space. **LHA121**: v1.21 another file compression utility that is even more efficient than ARC. **ARCGSH35:** Arcgsh v3.5, a program that eases the calling of the well-known archivers Zoo, Arc, LHarc and Shar. **UNERASE**: This accessory allows you to undelete a file or a subdirectory.

New ST Disks for April, 1991

#550D: STRABBLE and NOVA. STrabble is cosmetically similar to the crossword game Scrabble, although this version can be played with just one player--against a computer. Runs in mono or color. Nova is a brilliant shoot-'em-up arcade game, similar to Galaxian (C).

#551D: SUPERBOOT. V7.0 of Super Boot lets you select which desk acc., auto programs and DESKTOP.INF files to use. This latest version plays digitized sound and allows you to change function keys without going to desktop. Includes several programs useful in conjunction with Super Boot (acc, autosort, digiedit, Picswitch) and 3 pairs of sample sound and picture files. Plus, SnapIt screen capture utility, masskill to delete many files, and FormDoIt which alters the way Dialog and Alert boxes appear.

#552D: CALAMUS #3. Several new fonts (Lucifer, Tiempo, Pirates, Horstcap, Leecaps, Medici, and Zalescap) plus messages from GEnie Calamus round table (2/2/88 through 3/9/91).

#553D: ALADDIN #2. Aladdin's Magic Browser V1.1 enables you to convert Aladdin .DAT files to text files for use with other programs. Has built in options for searching and printing library listings. ALADCOMP.ARC, a directory of all GE files from #2139-18581 of Atari ST Roundtable Libraries in Aladdin format.

#554D: INFORMER II/R_BASE. Informer II is a multiple table, semi-relational, data/image manager capable of processing data records and manipulating presentation graphics. R_Base, shareware demo of database program (has a limited on number of records). Reports may be sent to printer or disk file.

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#547D: KID GAMES: 7KIDS and BARNIMALS. The Wolf and the Seven Kids is a first adventure for young computer users, ages 5-9, based on the Grimms' fairy tale, with several possible endings to the story, depending on what choices you make, and there are numerous opportunities for making choices. **Barnimals** is a listening/guessing game for the very youngest computer users, ages 0-4.

#548: UTILITY DISK NO. 47. BACKUPST: hard disk backup utility. **KTEXT133**: K_Text version 1.33 allows viewing of Degas or Pixel perfect pictures. **STEXT11**: fast text reader for the ST. **PFXPAK**: A German runtime packer that will LZH your executable files and put a bit of SFX code at the beginning. When you cliick on a program, it will first extract itself, then run. **LIBMASTR**: organize, modify, convert, and print your Print Master Libraries. **TEXTVIEW**: a GEM-based text file viewer with all functions controllable by the mouse. **TX2_VIEW**: Demo of text reading program, version 1.35. **PINHEAD**, drastically reduces the amount of time it takes to boot your computer and load and run programs. **BIGCOLOR**: V1.05 is for use with Mono monitors, and allows some low resolution and most medium resolution programs to be run on a Mono monitor. **SANDP21**: ver 2.1 allows you to make your own electronic newsletter by formating the text output in the window with different fonts and colors. **FB2**: First Base (ver 1.7) Database is a fast memory resident database system for small and medium size applications.

#549D: UTILITY DISK NO. 48. A2LSWTCH Allows you to switch back and forth between the ARC and LHARC compression methods. **ARCSHL23**: ARC Shell V2.3 is a GEM program, designed to work with ARC.TTP, that adds a GEM interface letting you point and click to select the various options instead of typing a command line. **UNLZH**: v1.61 combines GEM interface with high speed extraction routines to give you a simpler and faster way to extract LZH archives. **ARC602ST**: ARC File Archive Utility, V6.02 creates and maintains file archives with compressed files that take up a minimum amount of space. **LHA121**: v1.21 another file compression utility that is even more efficient than ARC. **ARCGSH35:** Arcgsh v3.5, a program that eases the calling of the well-known archivers Zoo, Arc, LHarc and Shar. **UNERASE**: This accessory allows you to undelete a file or a subdirectory.

New ST Disks for April, 1991

#550D: STRABBLE and NOVA. STrabble is cosmetically similar to the crossword game Scrabble, although this version can be played with just one player--against a computer. Runs in mono or color. Nova is a brilliant shoot-'em-up arcade game, similar to Galaxian (C).

#551D: SUPERBOOT. V7.0 of Super Boot lets you select which desk acc., auto programs and DESKTOP.INF files to use. This latest version plays digitized sound and allows you to change function keys without going to desktop. Includes several programs useful in conjunction with Super Boot (acc, autosort, digiedit, Picswitch) and 3 pairs of sample sound and picture files. Plus, SnapIt screen capture utility, masskill to delete many files, and FormDoIt which alters the way Dialog and Alert boxes appear.

#552D: CALAMUS #3. Several new fonts (Lucifer, Tiempo, Pirates, Horstcap, Leecaps, Medici, and Zalescap) plus messages from GEnie Calamus round table (2/2/88 through 3/9/91).

#553D: ALADDIN #2. Aladdin's Magic Browser V1.1 enables you to convert Aladdin .DAT files to text files for use with other programs. Has built in options for searching and printing library listings. ALADCOMP.ARC, a directory of all GE files from #2139-18581 of Atari ST Roundtable Libraries in Aladdin format.

#554D: INFORMER II/R_BASE. Informer II is a multiple table, semi-relational, data/image manager capable of processing data records and manipulating presentation graphics. R_Base, shareware demo of database program (has a limited on number of records). Reports may be sent to printer or disk file.

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New Spectre CN Library Disks

by Jeff Greenblatt

CN is adding #S111-#S115 PD and Shareware disks to the Spectre Library. Some of these applications will only work with version 3.0 of Spectre and are so noted. Disks are $4 each plus $1 S&H for every 4 disks. Order from CN Library, 122 N Johnson Rd, Sterling VA 22170 (703) 450-4761.

S115: Metamorphosis Demo. A fully functional demo of Metamorphosis 1.5.1. It converts Postscript fonts to 4 formats. Type 1 (ATM), Type 3, Illustrator 1.1 EPS (readable under Freehand or Illustrator), and Fontographer 3.x type that can be modified futher in Fontographer. Note: in demo only the uppercase consonants and numerals are converted and all Postscript output contains a small triangle in the lower left of the bounding box.

S114D: Utilities #17. 7 new or improved utilities: Set Pathes, Compact Pro 1.30, DOS Mounter Demo (Reads IBM disks under Spectre), Launcher 3.5, Sav-O-Matic, SoundMaster 1.6.5, and SoundMover 1.70 (Spectre 3.0 required).

S113D: ATM Fonts #3. 7 Type 1 Postscript fonts for use with Adobe Type Manager 1.2 or higher. The fonts are Black Chancery, Black Forest, Classica Heavy, Flintstones, Middleton, Sharktooth, and Upper West Side.

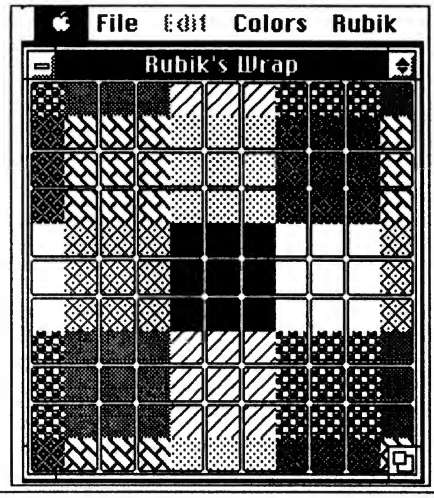
S112D: Text Adventures. 3 text adventure games including the original C & W Adventure. The other two adventures are Deep Space Drifter and Ditch Day Drifter.

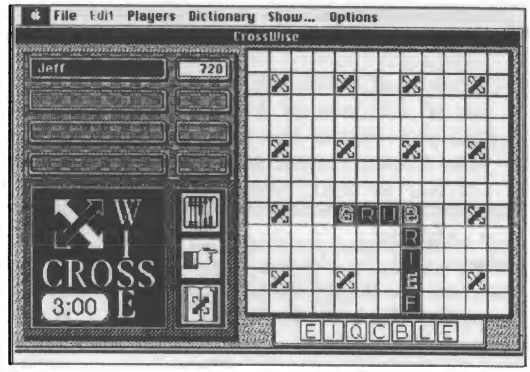
S111D: Games #16. 6 new games: Columns, Loyd's Lunacy, Office Attack, Rubik's Wrap, Tank Commander, and CrossWise. (Spectre 3.0 required.)

S110D: VideoWorks #3. 14 VideoWorks animations and a VideoWorks player (Circles 4th, City Street, Fish Story, Fool!, Lazer, MacMelt, Ol'SnakeEyes, Oracle, Shoes, Space Epic, Sub City, Tyrone, Weirdness, and Wishes.)

S109D: ATM Fonts #2. 8 Type 1 Postscript fonts for use with Adobe Type Manager 1.2 or higher (Benjamin Caps, Kinigstein Caps, Lower East Side, Lower West Side, Rudelsberg, Starburst, Upper East Side, and Varah Caps.)

S108D: Taromatic. A single HyperCard stack (Spectre 3.0 required). If you are into fortune telling or what the future beholds, give this a shot.





S107D: HyperStacks #12. 9 stacks (Spectre 3.0 required) for use with HyperCard (Amino Acids, Ansel Adams, Bloom County, Compress Plus, **Home Desk** (see picture), Homicide Investigation, HyperStation, Stock Tracker, and Usigi's DogCon.)

S106D: Games #15. Euchre 2.5, **Montana 2.0** (pictured), Pokeno, Precision Cribbage, **Save The Farm** (pictured), and **Spacestation Pheta 1.5** (pictured). (Spectre 3.0 required).

S105: ATM Fonts #1. Seven Type 1 Postscript fonts (Carrick Caps, Green Caps, Horst Caps, Konanur Caps, Lee Caps, Reynolds Caps, and Zaleski Caps.)

S104D: Intruder II. An adventure game created with World Builder.

S103D: Chime 1.6. Chime, (Spectre 3.0 req) related docs, and 27 chime sounds.

S102D: MouseDroppings Hints. 47 text files with hundreds of hints and tips on the use of the Macintosh.

S101D: Games #14. Express Lane, Glider+ 2.02 with Docs, Glypha 2.0 with Docs, MiniGolf, pNuki 1.1, Slam Dunk 1.2, TENS!, and Tripple Yahtzee (Spectre 3.0 required).

S100: Stuffit Classic 1.6
S99D: Utilities No. 16
S98D HyperStacks No. 11
S97D: Games #13
S96D: PublishIt Easy Demo
S95: Startup Screens No. 2
S94: Sounds No. 9
S93D: Games No.12
S92D: EPS Clip Art No.3
S91D: Utilities No.15
S90D: Games No.11
S89: HyperStacks No.10
S88D: EPS Clip Art No.4
S87: Utilities No. 14
S86D: Twilight Vale Adv. Game
S85D: EPS Clip Art No. 3
S84: Sounds No.8
S83: Utilities No.13
S82D: HyperStacks No.9
S81D: Grendel 1.0 Adv. Game

CN Cart #2

Disks S01 to S80 are available individually, or all of them can be obtained on a single 44MB removable Syquest cartridge. Cartridge price is **$119.95** + $4 Shipping & Handling.

S80: Postscript Fonts No.4
S79: Utility No.2
S78: EPS Clip Art No.2
S77: Graphics No.3
S76: StartUp Screens No.1
S75:: Games No.10
S74: Sounds No.7
S73: Utilities No.11
S72D: HyperStacks No.8
S71D: Shanghai Demo
S70D: HyperStacks #7
S69: Sounds No.6
S68: Games No.9
S67: Utilities No.10
S66: Games No.8
S65D: HyperStacks No.6
S64D: Postscript Clip Art No.1
S63: Utilities No.9
S62D: PipeDream Demo
S61D: HyperStacks No.5
S60D: PostScript Fonts No.3
S59: Sounds No.5
S58D: Clip Art No.2
S57: Utility No.8
S56D: HyperStacks No.4
S55: Utility No.7
S54: Games No.7

S53D: Clip Art No.1
S52: Postscript Fonts No.2
S51D: Postscript fonts No.1
S50: Dungeons of DoGm, V5.4
S49: Lawn Zapper arcade Game
S47D: Phoenix Adv Game, disk I
S48D: Phoenix Adv Game, disk II
S46: Everyman 1 Adv. Game
S45: Graphics No.2
S44: Utility No.6
S43 VideoWorks w/Sound No.2
S42: Productivity No.2
S41: Productivity No.1
S40D: HyperUtility No.3
S39: Utility No.5
S38: Games No.6
S37D: HyperStacks No.4
S36: Sounds No.4
S35D: HyperStacks No.3
S34: Excel Templates
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S31: DAs No.2
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S29: Sounds No.3
S28: Database Builder Demo
S27: Games No. 5

S26: Fkeys No.1
S25D: MacMoney Demo
S24: Games No.4
S23: Sounds No.2
S22: Sword of Siegfried
S21: Utility No.3
S20D: MacDraw II Demo
S19D: Hyper Utility No.1
S18: Graphics No.1
S17: Sounds No.1
S16: DAs No.1
S15: Games No.3
S14: Utility No.2
S13D: Stacks No.2
S12D: Full Impact Demo
S11: Utility No.1
S10: HyperStacks No.1
S09: Telecom No.1
S08: Image Studio Demo
S07: Games No.2
S06D: Powerpoint Demo
S05: Games No.1
S04D: Aldus Freehand Demo
S03D: Red Ryder 9.4
S02: MacPaint 2.0 Demo
S01: MacWrite 5.0 Demo

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